CANADA

COUNTRY PROFILE

**IMPLEMENTATION OF AGENDA 21:
REVIEW OF PROGRESS MADE SINCE THE
UNITED NATIONS CONFERENCE ON
ENVIRONMENT AND DEVELOPMENT, 1992**

**Information Provided by the Government of Canada to the
United Nations Commission on Sustainable Development
Fifth Session
7-25 April 1997
New York**

United Nations Department for Policy Coordination and Sustainable Development
Division for Sustainable Development
The Information contained in this Country Profile is also available on the World Wide Web, as follows:
http://www.un.org/dpcsd/earthsummit

E/CN.17/1997/Misc.38
97-08855

CANADA

This country profile has been provided by:

Name of Ministry/Office: Department of Foreign Affairs and International Trade, Environment Division.

Date: 14 February 1997

Submitted by: Ms. Carmel Whelton

Mailing address: Department of Foreign Affairs and International Trade, B-Tower, 4th Floor, 125 Sussex Drive, Ottawa, Ontario, Canada K1A 0G2.

Telephone: (613) 996-2110

Telefax: (613) 944-0064

E-mail:

Note from the Secretariat: An effort has been made to present all country profiles within a common format, with an equal number of pages. However, where Governments have not provided information for the tables appended to Chapters 4 and 17, those tables have been omitted entirely in order to reduce the overall length of the profile and save paper. Consequently, there may be some minor inconsistencies among the formats of the different country profiles.

All statistics are rendered as provided by the respective Governments.

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ACRONYMS

APELL	Awareness and Preparedness for Emergencies at Local Level
CFC	chlorofluorocarbon
CGIAR	Consultative Group on International Agriculture Research
CILSS	Permanent Inter-State Committee on Drought Control in the Sahel
EEZ	exclusive economic zone
ECA	Economic Commission for Africa
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
ELCI	Environmental Liaison Centre International
EMINWA	environmentally sound management of inland water
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
FAO	Food and Agriculture Organization of the United Nations
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch (WMO)
GEF	Global Environment Facility
GEMS	Global Environmental Monitoring System (UNEP)
GEMS/WATER	Global Water Quality Monitoring Programme
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Pollution
GIPME	Global Investigation of Pollution in Marine Environment (UNESCO)
GIS	Geographical Information System
GLOBE	Global Legislators Organisation for a Balanced Environment
GOS	Global Observing System (WMO/WWW)
GRID	Global Resource Information Database
GSP	generalized system of preferences
HIV	human immunodeficiency virus
IAEA	International Atomic Energy Agency
IAP-WASAD	International Action Programme on Water and Sustainable Agricultural Development
IARC	International Agency for Research on Cancer
IBSRAM	International Board of Soil Resources and Management
ICCA	International Council of Chemical Associations
ICES	International Council for the Exploration of the Sea
ICPIC	International Cleaner Production Information Clearing House
ICSC	International Civil Service Commission
ICSU	International Council of Scientific Unions
IEEA	Integrated environmental and economic accounting
IFAD	International Fund for Agricultural Development
IGADD	Intergovernmental Authority for Drought and Development
IGBP	International Geosphere-Biosphere Programme (ICSU)
IGBP/START	International Geosphere-Biosphere Programme/Global Change System for Analysis, Research and Training
ILO	International Labour Organisation
IMF	International Monetary Fund
IMO	International Maritime Organization
INFOTERRA	International Environment Information system (UNEP)
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPCS	International Programme on Chemical Safety
IPM	integrated pest management
IRPTC	International Register of Potentially Toxic Chemicals
ITC	International Tin Council
ITTO	International Tropical Timber Organization

ACRONYMS (Cont'd)

IUCN	International Union for Conservation of Nature and Natural Resources
MARPOL	International Convention for the Prevention of Pollution from Ships
OECD	Organisation for Economic Cooperation and Development
PGRFA	plant genetic resources for agriculture
PIC	prior informed consent procedure
SADCC	South African Development Co-ordination Conference
SARD	sustainable agriculture and rural development
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNU	United Nations University
WCP	World Climate Programme (WMO/UNEP/ICSU/UNESCO)
WFC	World Food Council
WHO	World Health Organization
WMO	World Meteorological Organization
WWF	World Wide Fund for Nature (also called World Wildlife Fund)
WWW	World Weather Watch (WMO)

OVERVIEW

Canada took part in the United Nations Conference on Environment and Development (UNCED) with a long term record of domestic and international action on sustainable development issues. Since UNCED, Canada has built on that record, while recognizing that many challenges still exist. It has worked to preserve a level of natural and social wealth that has earned it the number one ranking in the most recent Human Development Index of the United Nations Development Program.

Canada acted quickly to sign and ratify the conventions on biological diversity, climate change and desertification. It was pleased to be given the opportunity to host the Permanent Secretariat of the Convention on Biological Diversity in Montreal and is now offering to host the Permanent Secretariat of the Desertification Convention. Canada has provided direct financial support to enable many developing states to participate fully in convention negotiations and has funded some costs related to the overall process of negotiating certain agreements.

Canada played a central role in the process leading to the United Nations Agreement on Straddling and Highly Migratory Fish Stocks. Canada has been active in the development of the Global Programme of Action for the Protection of the Marine Environment from Land-based Activities. It has been committed to improving cooperation on international forests issues through initiatives such as the International Model Forests Program, the Montreal Criteria and Indicators process, and its co-sponsorship with Malaysia of the Intergovernmental Panel on Forests under the UN Commission on Sustainable Development.

Canada's federal and provincial governments each exercise jurisdiction over issues and sectors that are an intrinsic part of sustainable development. Both levels of government have been working together to ensure coherent and complementary strategies. Governments cooperate through groups such as the Canadian Council of Ministers of the Environment, the Canadian Council of Forest Ministers and similar bodies that serve health, agriculture and natural resource ministers to develop common strategies on issues arising from our UNCED commitments. Governments can follow through with appropriate legislation, regulations, policies and/or programs of action. The Canadian Biodiversity Strategy is a good example of this cooperative model as is the process to update legislation protecting endangered species.

Individual governments have taken legislative action since UNCED. For example, the federal government introduced many changes to the Canadian Environmental Protection Act in late 1996 in order to emphasize a pollution prevention approach. It strengthened the Canadian Environmental Assessment Act in 1995 to integrate environmental considerations into all federal project planning. It now requires all federal departments to develop sustainable development strategies by the end of 1997. The new Oceans Act is linked to a comprehensive Oceans Management Strategy.

Provincial and territorial governments have also been amending legislation affecting sustainable development. For example, Alberta integrated many of its environmental laws into a single statute in 1992. British Columbia created a Commission on Resources and the Environment that uses regional land use plans to address resource development issues.

The Aboriginal peoples of Canada are gaining greater control over sustainable development issues that affect them and their lands. This trend has increased since 1992 and is consistent with the federal government's recognition of the right of Aboriginal peoples to self-government. Many aboriginal governments and communities are gaining additional powers and influence over land use and resource management decision-making processes, including wildlife management and conservation issues. Research into, and use of, the traditional knowledge of Aboriginal peoples has also become a higher priority.

In Arctic Canada, indigenous peoples are important participants in activities such as the Arctic Environmental Protection Strategy. The Arctic Council was founded in 1996 by the eight Arctic countries to address common issues, in particular, sustainable development and environmental protection. Arctic organizations of indigenous peoples play a strong role in its work.

OVERVIEW (Cont'd)

Governments consult widely with Canada's non-governmental and community-based organizations. Those groups play essential roles in informing the public and representing a range of perspectives on sustainable development issues. They have become central to efforts through which governments work with major groups, communities and citizens. All these major groups and governments pursue consensus-based approaches to resolving issues and to address specific sustainable development priorities. For example, in the Action Plans for the Great Lakes, Fraser River, St. Lawrence River and Atlantic Canada, communities are partners with provincial governments and the federal government to address such issues as environmental protection and conservation. Quebec has regional environmental councils that bring non-governmental groups together. Another example is the Whitehorse Mining Initiative Leadership Council Accord of 1994 which was the result of consultation among governments, Aboriginal communities, industry, labour and environmental non-governmental organizations.

Similar processes are essential to the strategies that Canada is using to deal with many commitments arising from UNCED. For example, the Accelerated Reduction/Elimination of Toxics initiatives is a voluntary collaboration between industry and government. Its goals are to virtually eliminate emissions of 30 substances and significantly reduce emissions of 87 other substances. The Voluntary Challenge and Registry (VCR) Program and Ecogeste have engaged organizations that are responsible for more than half Canada's greenhouse gas emissions in efforts aimed at helping to fulfill Canada's climate change commitments.

One of Canada's most significant priorities is sustainable forest management. Canada has backed up its international concerns with a strong domestic approach that involves governments, Aboriginal peoples, industry, labour, environmental and community organizations. Their input has been essential to a comprehensive action plan that helped Canada to implement its UNCED commitments.

Canada's environmental industries have continued to develop since UNCED in response to technological advances and a strong market for environmentally-sound solutions. The Canadian Environmental Industries Strategy and Technology Partnerships Canada are examples of federal support. Individual provinces also assist this fast-growing sector. These companies, associated organizations and other research institutions contribute to international technology transfer.

The Canadian International Development Agency (CIDA) and the International Development Research Centre have lead roles in providing Canadian assistance to developing countries in support of Agenda 21 and the conventions signed and initiated at UNCED. The International Institute for Sustainable Development and many other non-governmental organizations are also actively involved in similar efforts. CIDA has integrated the principles of sustainability into its Official Development Assistance program. Through development assistance programming that seeks to address the closely linked problems of poverty and environmental degradation, CIDA is promoting development that will be sustainable over the long term. For example, CIDA completed a Poverty Reduction Policy in 1995 that guides work with people who can be most affected by environmental degradation. CIDA's commitment to gender issues ensures that the capacities and needs of women are important in programming. These steps, along with initiatives launched by other organizations support the achievement of UNCED priorities.

Canada recognizes that the shift to sustainable patterns of development is an incremental process. As in many countries, fiscal policy priorities have meant substantial spending restraints on governments in Canada. They have had to make difficult decisions on both domestic and international spending. However, this climate of restraint has also encouraged an end to longstanding subsidies that were not in keeping with sustainability. Canada's record since UNCED has been one of acting on many of its commitments, and making efforts to implement most of the others.

FACT SHEET

CANADA

1. Name of Key National Sustainable Development Coordination Mechanism(s)/Council(s).
(1) Interdepartmental Committee (Federal); (2) National Round Table on Environment and the Economy; (3) Canadian Council of Ministers for the Environment; (4) Commissioner of Environment and Sustainable Development.

Contact point (Name, Title, Office): Carmel Whelton, Environment Division, Department of Foreign Affairs and International Trade

Telephone: (613) 996-2110 **Fax:** (613) 944-0064 **e-mail:**

Ken Mcartney, Deputy Director, Environment Division, Department of Foreign Affairs and International Trade

Telephone: (613) 995-2168 **Fax:** (613) 944-0064

Mailing address: Department of Foreign Affairs and International Trade, B-Tower, 4th Floor, 125 Sussex Drive, Ottawa, Ontario, Canada K1A 0G2

2. Membership/Composition/Chairperson:

2a. List of ministries and agencies involved: Foreign Affairs; Environment Canada; Canadian International Development Agency; Finance Canada; Agriculture Canada; Industry Canada; Canada Mortgage & Housing Corporation; Natural Resources Canada; Auditor General; Heritage Canada; International Development Research Centre;

2b. Names of para-statal bodies and institutions involved, as well as participating of academic and private sectors: Canadian Council for Business; National Round Table on Environment & The Economy; Projet de Société; International Institute for Sustainable Development; Canadian Pulp & Paper Association; Federation of Canadian Municipalities;

2c. Names of non-governmental organizations involved: Canadian Council for International Cooperation; Canadian Environment Network; Canadian Environment Indigenous Network; United Nations Association of Canada; Canadian Forest Association; Friends of the Earth.

3. Mandate role of above mechanism/council: Coordinate Canadian activities related to implementation of Agenda 21. Development of Canada's National Report.

4. If available, attach a diagram (organization chart) showing national coordination structure and linkages between ministries: Not available.

CANADA

AGENDA 21 CHAPTER 2: **INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC POLICIES (with special emphasis on TRADE)**

NATIONAL PRIORITY:

STATUS REPORT: Chapter 2 of Agenda 21 emphasizes the promotion of sustainable development through trade, by formulating policies that link trade and the environment, and by encouraging macroeconomic policies that are conducive to environmentally sustainable development. Canada's view is that trade liberalization helps lead to the economic growth that helps to provide resources needed for environmental protection; while a healthy environment helps to provide the natural resources necessary to create long term economic growth stimulated by trade. With this in mind, Canada has worked to promote trade liberalization in the GATT and the new World Trade Organization (WTO). Canada has been an active participant in the Committee on Trade and Environment (CTE) of the WTO and also in the deliberations of the OECD's Joint Experts Committee on Trade and Environment. Since UNCED, Canada has reformed its General Preferential Tariff to provide better access to the Canadian market for the least developed countries.

Canada has provided support to developing countries at key negotiations on issues of global importance, largely through its Official Development Assistance (ODA) programme. This has created a link between development programmes on the ground and international policy dialogue. Through ODA, technical cooperation, and support for intergovernmental dialogue, Canada is working with domestic and international partners to promote global development that is sustainable.

The heart of Canada's official development assistance policy is threefold. It involves integrating environmental considerations into the decision-making process, according a higher priority to assisting developing countries to improve their capacity to deal with environmental issues and working closely with Canadian and international partners to help them address the challenge of integrating environmental considerations into their activities. The policy encourages developing countries to work together with the Canadian International Development Agency (CIDA) to implement comprehensive national programs that promote sustainability.

A fundamental aspect of Canadian international co-operation is involvement in bilateral and multilateral dialogue with developing countries and international financial institutions to promote the integration of development and the environment considerations into their official policies. For example, on forests issues, Canada is promoting a dialogue that could lead to a comprehensive international convention on forests. Canada's International Model Forest Program, managed by the International Development Research Centre (IDRC), and the "Montreal process" to develop criteria for and indicators of sustainable management of boreal and temperate forests outside of Europe have complemented this dialogue. The International Model Forest Program has been successful in providing on-the-ground demonstration of sustainable use forestry practices and the long-term benefits that can be derived from the wise management of this resource.

Canada continues to be a strong supporter of and contributor to both the Multilateral Fund of the Montreal Protocol, based in Montreal, and the Global Environment Facility, two key mechanisms to help developing countries participate in global efforts to address environmental problems.

At the Earth Summit in 1992, the Prime Minister of Canada announced that the mandate of the IDRC would be broadened to emphasize sustainable development issues. As a result, IDRC has provided more than C$400 million in support over the last five years to developing country researchers and policy makers, and their Canadian partners, to undertake research and to strengthen capacity in key sectors. These have included food systems on fragile lands, community natural resource management, biodiversity conservation, improved technologies for small enterprises, ecosystem health and the use of new communication technologies for networking and exchange of information.

STATUS (cont'd)

Canada played an active role at the 1996 World Food Summit, has endorsed the WFS Plan of Action and agreed to implement its seven commitments. In concrete terms, this means that Canada will cooperate in efforts to halve the number of the world's malnourished people between now and 2025.

In the Development Assistance Committee (DAC) of the OECD, Canada is encouraging discussion of environmental security issues. As pressure on natural resources and the carrying capacity of the natural environment is degraded, particularly in the poorest countries, social instability is inevitable. Such instability impedes progress towards sustainable development and encourages conflict.

Significant challenges remain in the area of international cooperation if global sustainable development is to be achieved. Canada and other donor countries have agreed on a series of targets for the near future, detailed in the DAC's "Shaping the 21st Century," with regard to development and meeting the needs of the poor in a sustainable manner. If these targets are to be met, then we must look for innovative ways to mobilize the necessary resources and draw upon the expertise, experience and capabilities of local peoples who are best suited to meet their own needs.

Cross-Sectoral Issues

1. **Decision-Making Structure:** No information

2. **Capacity-Building/Technology Issues:** No information

3. **Major Groups:** No information

4. **Finance:** No information

5. **Regional/International Cooperation:** No information

AGENDA 21 CHAPTER 3: COMBATING POVERTY

NATIONAL PRIORITY:

STATUS REPORT:

- Focus of national strategy

Chapter 3 of Agenda 21 emphasizes the relationship between poverty and the environment. Canada has a variety of programs to address the need of Canadians with low incomes. However, Canada's primary focus on poverty issues in the context of Agenda 21 is international and centres on contributions made through its Official Development Assistance (ODA) program.

The overriding objective of Canadian ODA is poverty-reduction. This is reflected throughout the six program priorities for Canadian ODA (basic human needs; women in development; infrastructure; human rights, democracy, and good governance; private sector development; the environment). Canada's bilateral ODA program is managed by the Canadian International Development Agency (CIDA), which works with a variety of different partners. It uses a number of approaches including the provision of funding to Canadian non-governmental organizations working with partners at the grassroots level in developing countries. These projects are designed and implemented in close association with local communities. CIDA favours projects that are aimed at reducing poverty for a clearly identified target group and that offer a good delivery mechanism.

Canada's strategy in multilateral agencies has been to push for integration of poverty into mainstream programming, with greater focus on participatory development and specific targeting. Canada has advocated the use of policy dialogue and reforms for poverty reduction.

- **Highlight activities aimed at the poor and linkages to the environment**

Cross-Sectoral Issues

1. **Decision-Making Structure:** No information

2. **Capacity-Building/Technology Issues:** No information

3. **Major Groups:** No information

4. **Finance:** No information

5. **Regional/International Cooperation:** No information

NB: Developed countries, where domestic poverty alleviation is not a major concern may wish to briefly describe their position regarding global poverty alleviation.

STATISTICAL DATA/INDICATORS

	1985	1990	1992	Latest 199_	
Unemployment (%)					
Population living in absolute poverty					
Public spending on social sector %					
Other data					

AGENDA 21 CHAPTER 4: CHANGING CONSUMPTION PATTERNS

NATIONAL PRIORITY:

STATUS REPORT:

- **National policy objectives/focus**

A variety of initiatives have been implemented in Canada to alter consumption patterns and encourage more sustainable production processes. For example, the National Packaging Protocol (NAPP) is a set of policies aimed at minimizing the environmental effects of packaging and reducing the amount of packaging sent for disposal by at least 50 percent of 1988 levels by the year 2000. The interim target, a 20 percent reduction established for 1992, was exceeded. A national survey is being conducted to monitor progress toward the 1996 reduction target of 35%. Several provincial governments have also introduced waste minimization programs. For example, in 1994 more than 50% of municipalities in Quebec had access to recycling services.

The Alliance of Canadian Manufacturers and Exporters has developed a manufacturing Environmental Performance Program. It includes a reference guide on improving environmental performance, an environmental coordinator's handbook, an executive forum, and a register of "environmental success stories". The Canadian Standards Association's (CSA) voluntary Environmental Management Program encourages organizations to consider the environment when making business decisions. Guidance documents have been provided on topics such as: life cycle assessment, environmental performance evaluation, risk assessment and management, environmentally responsible procurement, pollution prevention, environmental labeling, and environmental management systems. The Canadian forest industry is working with the CSA to develop a certification program for forest products coming from sustainably managed forests. The Canadian Institute of Chartered Accountants is promoting environmental accountability in the corporate sector. In conjunction with the International Institute for Sustainable Development, Winnipeg, the CSA and the Financial Executives Institute of Canada has prepared a guidance document on Reporting Environmental Performance.

Governments are also improving their own consumption practices and supporting research consistent with Chapter 4 of Agenda 21. For example, the federal government has launched a five year plan to green its motor vehicle fleet. The plan includes measures such as fleet reduction, green driving training, and increased use of alternative fuels. Agriculture and Agri-Food Canada is sponsoring research to reduce the production cost of ethanol, investigating technology and process change and the use of alternative low-input crops with fewer life cycle emissions than corn. The federal government is supporting research and field trials that promote the production of bio-diesel, a diesel-like fuel produced from vegetable oils such as canola and soybean, and explore the use of hydrogen, natural gas and propane in vehicles.

Canada's Federal Building Initiative (FBI), managed by Natural Resources Canada, is proving successful in increasing energy efficiency in federal facilities. By establishing a three-way partnership between a utility, a qualified energy management firm and a federal organization, the program enables energy efficiency upgrades to be financed through the resulting energy savings.

The federal government's Environmental Choice Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption. By evaluating an organization's efforts to minimize the impact of pollution generated by the production, use and disposal of goods and services available to Canadians, the program's distinctive EcoLogo lets consumers know that the products they are purchasing meet high environmental standards.

National Targets

There are no overall national targets for sustainable consumption, however the Canadian Council of Ministers of the Environment has set targets for related areas (e.g., packaging and waste reduction targets - 50% 1988 levels by the year 2000). To focus more attention on the challenge of sustainable consumption and production the federal government will be hosting a national conference on the issue in 1997.

Cross-Sectoral Issues

1. **Decision-making structure**: There is no current over-arching regulatory framework that deals with sustainable consumption, however, there is considerable provincial and federal activity which contributes to more sustainable production and consumption.

2. **Major Groups:** Non-governmental organizations continue to play key roles in drawing public attention to consumption issues and in sparking debate over the implications of changing consumption patterns. Progress is being made at all levels of government in the area of green procurement. A number of corporations are examining their own purchasing practices with an aim to reduce energy and material use as well.

3. **Major Groups:** No information

4. **Finance**: The use of economic instruments and tax policies to foster more sustainable patterns of consumption and production has received some attention from groups such as the National Round Table on Environment and Economy.

5. **Regional/International Co-operation**: Canada participates in discussions in the OECD on promoting sustainable consumption and production within OECD member countries.

STATISTICAL DATA/INDICATORS

	1985	1990	1992	Latest 199_	
GDP per capita (current US$)					
Real GDP growth (%)					
Annual energy consumption per capita (Kg. of oil equivalent per capita)					
Motor vehicles in use per 1000 inhabitants					
Other data					

CANADA

Government policies affecting consumption and production.

1. Goals and Agents (Stakeholders)

Indicate with a (X) those agents which your Governments policies are meant most to influence.

Agents / Goals	Producers	Local authorities	Central Government	Households	Civil society
Material efficiency	X				
Energy efficiency:	X		X	X	
Transport	X	X		X	X
Housing	X			X	
Other					
Waste:					
Reduce	X	X		X	
Reuse	X	X		X	
Recycle	X	X		X	

Comments:

2. Means & Measures and Agents (Stakeholders)

Indicate with an (R) those agents who assume primary responsibility for any of the policy measures indicated; indicate with an (I) the agents for which the impact is expected to be especially significant.

Means & Measures / Agents	Producers	Local authorities	Central Government	House-holds	Civil Society
Improving understanding and analysis					
Information and education (e.g., radio/TV/press)	R	R	R		
Research			R		
Evaluating environmental claims			R		
Form partnerships	R	R	R		
Applying tools for modifying behaviour					
Community based strategies		R	R		
Social incentives/disincentives (e.g., ecolabelling)			R	R	
Regulatory instruments	I	I	R		
Economic incentives/disincentives	I		R		I
Voluntary agreements of producer responsibility for aspects of product life cycle	R	R			
Provision of enabling facilities and infrastructure (e.g., transportation alternatives, recycling)		R	R		
Procurement policy	R	R	R		
Monitoring, evaluating and reviewing performance					
Action campaign					R
Other (specify)					

Comments:

AGENDA 21 CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY

NATIONAL PRIORITY:

STATUS REPORT: Chapter 5 of Agenda 21 focuses on the relationship between population issues and sustainable development. The Program of Action adopted by concensus during the International Conference on Population and Development, held in Cairo in 1994 represented a new approach to population issues, focusing on empowerment of women, a commitment to women's health, and the achievement of development goals rather than demographic targets. Canada was instrumental in formulating the concensus reflected in both these documents, and takes population issues into consideration in its development assistance programming in the area of population on girls' education, reducing poverty among women, integrating women in developmental activities, and promoting women's rights. In its recent statement on foreign policy *Canada in the World*, the Government of Canada has commited 25% of its official development assistance resources to meeting basic human needs, with family planning and primary health care identified as key components of Canadian population programming, as they are vital components of action to reduce poverty.

As long as a country's population growth is greater than its economic growth, its gross domestic product per capita will continue to drop and it becomes increasingly difficult to fight poverty effectively -- the central objective of Canadian development assistance. Population growth places pressure on the biophysical environment, often leading to unsustainable land management and agricultural practices, increased pollution, and the over-exploitation of natural resources. Canada's primary objectives with regard to addressing unsustainable demographic dynamics are:

- To promote a better understanding of the impact of population dynamics on progress towards sustainable development;
- To support the development of policies and strategies aimed at addressing pressures of population on sustainable development;
- To support the provision of comprehensive client-oriented reproductive health care for women, men, and adoloescente, centered on high-quality family planning services tht include information, education, and communications components; and
- To support development programmes that emphasize health, education, and income generation for women, in order to foster population levels consistent with sustainable development.

By its active participation in the Cairo Conference and the 1995 World Conference on Women in Beijing, the Government of Canada has committed itself to a significant contribution toward improving the status of women, women's health and reproductive health, as well as to a balanced response to issues of population and sustainable development. Canada's approach to development cooperation in the area of population will ensure that we work with developing countries to attack both the direct and indirect causes of unsustainable population growth. Canadian development assistance in the area of population for the 1996/97 fiscal year is expected to total some $29 million, including core contributions to both the UNFPA and the International Planned Parenthood Federation.

STATUS (Cont'd)

Population growth represents a significant threat to global security and sustainable development. Almost all projected population growth is occuring in developing countries, many of which, if current trends continue, will see their populations double before stabilizing. This has major implications for food security, access to social programs such as education and health, and for the environment and economic development. Canada recognizes that to address the problem of unsustainable population growth, all countries must cooperate to implement the program of action set out in Cairo. The approach described in *Canada in the World* should ensure that Canada is able not only to do its share but also play a leadership role in global efforts to address this issue.

Cross-Sectoral Issues

1. **Decision-Making Structure:** No information
2. **Capacity-Building/Technology Issues:** No information
3. **Major Groups:** No information
4. **Finance:** No information
5. **Regional/International Cooperation:** No information

STATISTICAL DATA/INDICATORS

	1990	1993	Latest 199_	
Population (Thousands) mid-year estimates				
Annual rate of increase (1990-1993)				
Surface area (Km^2)				
Population density (people/Km^2)				
Other data				

AGENDA 21 CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH

NATIONAL PRIORITY:	
STATUS REPORT: The federal government, through Health Canada, began a multi-year program called the Action Plan on Health and the Environment (APHE) in 1992 that will end in 1997. APHE comprises 15 initiatives, grouped under four broad headings: Regulation and Monitoring, Groups at Risk, Facilitating Individual and Community Action and International Liaison. Post APHE, Health Canada has identified health and environment activities to be undertaken under the following "strategic priorities": Control of Toxic Substances in the Environment, Assessment and Management of Bioregional Health Effects, Environmentally Related Disease Surveillance and Control, and Community Action and Social Marketing. Health Canada, through its Great Lakes Health Effects Program, is a major partner in the Great Lakes 2000 initiative and has undertaken numerous investigations into the health of residents in the Great Lakes Basin. It also collaborates with the Ministère de la Santé et des Services Sociaux du Québec and the Quebec health network in the health component of St. Lawrence Vision 2000. Key programs related to First Nations peoples include the Effects on Aboriginals from the Great Lakes Environment (EAGLE) and the Drinking Water Safety Program for Native People. Health Canada has proposed the introduction of a Drinking Water Materials Safety Act to regulate chemicals and materials that come into contact with drinking water. Guidelines for Canadian Drinking Water Quality have been updated and now also include guidelines for radiological characteristics. Under the Canadian Environmental Protection Act (CEPA), 44 priority substances were assessed for their risks to health and additional substances have been identified for future assessment. In June, 1995 a federal Parliamentary Committee conducted a five-year review of CEPA and produced a report titled, *"Its Our Health - Toward Pollution Prevention"*. The Canadian Environmental Assessment Act (CEAA) was proclaimed in January, 1995 allowing Health Canada to assess the risks to human health of approximately 100 federal projects annually. A publication was produced by Health Canada in 1992 titled, *"A Vital Link - Health and the Environment in Canada"*. This publication provides a comprehensive "state of human health" report for Canadians related to interactions with the environment and offers suggestions on how to reduce risks to health. In 1994, The Federal, Provincial and Territorial Advisory Committee on Population Health produced *"Strategies for Population Health - Investing in the Health of Canadians"*. The physical environment is identified as one of several key determinants of health. A National Forum on Health has been created to make recommendations on the future of health care in Canada. The Canadian International Development Agency (CIDA), recently released a draft discussion paper titled, *"Strategy for Health"*. It identifies the importance of environment, housing, water and sanitation as integral components of primary health care in developing countries. The Air Health Effects Program has characterized the health effects of exposure to a number of air pollutants and has demonstrated an association between hospitalization and recent exposure to air pollution. The Federal Nuclear Emergency Response Plan has been revised. Programs have been developed to warn Canadians to use appropriate-strength sun screen and avoid prolonged unprotected exposure to the sun. The Environmental Related Disease Surveillance initiative has been instrumental in identifying risk factors associated with asthma and in identifying strategies to reduce asthma morbidity and mortality in Canada. A national collaborative effort has resulted in an enhanced cancer surveillance system linked to an environmental quality database. A Market Basket Survey undertook the identification of minute amounts of contaminants in foods consumed by average Canadians and has estimated the extent to which they are present in daily diets. Under an initiative on Pregnancy and Child Development, the relationship between reproductive health and the physical and social environment is being investigated. Research undertaken through the Northern and Arctic Pollution initiative, on exposure to pollutants in Canada's northern region and the Arctic, will provide residents, especially Aboriginal people, with information on the risks and benefits of consuming traditional foods. The Healthy Environment Program and the Active Living Environments Program have promoted the involvement of individuals and communities in collaborative efforts, to make them more aware of health and environment issues and provide information on how they can take action to influence their health. Healthy outdoor activities, that are environmentally friendly, are encouraged.	

STATUS (Cont'd)

In 1995, all federal government responsibilities for the registration of pesticides were centralized in a single agency, the Pest Management Regulatory Agency (PMRA). The PMRA is responsible for assessing the potential for pesticide residues to occur in food commodities. Health Canada is a key contributor of scientific information on the health effects of chemicals being reviewed by the International Program on Chemical Safety (IPCS). In February 1997, Ottawa, Canada will host the second Intergovernmental Forum on Chemical Safety.

A document titled, Principles of Cooperation on Health and the Environment has recently been endorsed by the Canadian Council of Ministers of the Environment (CCME). It acknowledges the necessity of intersectoral collaboration to address health and environment problems/issues. It builds on the Pan American Charter on Health and Environment in Sustainable Human Development, adopted by Canada in October, 1995.

A number of significant activities took place within the provinces on health and environment initiatives. Examples include:

In Alberta, a major study was undertaken titled, "Northern River Basin Human Health Monitoring Program", to assess health effects linked to environmental contaminants in Northern Alberta. A "Review of Regional Environmental Health Programs in Alberta" was published and a State of Environment Report for Alberta was released in 1995. Two new regulations under the *Waste Reduction and Prevention Act* have been developed to establish stewardship corporations, independent of government, to manage recycling programs. A study on disinfection by-products in Alberta drinking water was undertaken in 1996.

In Ontario, an *Environmental Bill of Rights (EBR) Act* was proclaimed in February, 1994. The Act provides for: public participation in decision making; an electronic registry for information on environmental decisions; increased government accountability, increased access to courts and increased employee protection. Air pollutants continue to be an area of concern and a comprehensive provincial strategy for smog is underway.

In Nova Scotia, a new *Environment Act* was proclaimed in January, 1995 which combined and enhanced existing legislation. An Air Quality Index was implemented in 1996 and studies were undertaken on the association between THM levels in water and congenital birth defects. A Solid Waste-Resource Management Strategy was released in October, 1995.

In the Northwest Territories, a Human Health Baseline Monitoring Study was undertaken to monitor selected environmental contaminants in maternal and umbilical cord blood in. A major report, "Mercury - A Health Concern" in the NWT was published.

In Saskatchewan, the Ministries of Health and Environment are jointly monitoring the human health and environmental effects of uranium mining in the Northern region of the province. A new *Radiation Health Act* is being developed.

In Quebec, a health survey of the Inuit of Nunavik was undertaken by Santé Québec in 1992 to estimate human exposure to contaminants in the food chain. In its upcoming General Survey (1998), Santé Québec will be measuring environmental risk factors in the home associated with asthma and allergies.

In Manitoba, new legislation titled, the Sustainable Development Act, is proposed to enable "one stop" approvals procedures for new commercial/industrial developments. The fourth Manitoba State of the Environment Report is due in 1997 and is a collaborative effort with the International Institute for Sustainable Development.

In 1993 the Government of New Brunswick tabled a Clean Air Strategy in the Legislative Assembly. Stakeholder consultations on a *Clean Air Act* were begun in 1995.

The Yukon government recently passed regulations under the *Environment Act* including the Pesticides Regulations (1994), the Special Waste Regulations (1995) and the Ozone Depleting Substances Regulations (1996).

Cross-Sectoral Issues

1. Decision-Making Structure: Provincial governments are largely responsible for delivery of health care in Canada. The federal government, through Health Canada, works with them to develop guidelines and recommendations on health issues. The Canadian Council of Ministers of the Environment and the Advisory Committee on Population Health are important federal/provincial/territorial bodies that meet to develop national strategies. All levels of government have continued to contribute to activities in the Canadian health sector since the last report to the Commission on Sustainable Development (CSD). Key federal/provincial/territorial documents are identified in the Status Report. Health Canada works closely with provincial ministries of health through the Committee on Environment and Occupational Health in setting guidelines and for exposure to environmental contaminants.

2. Capacity-Building/Technology Issues: Health Canada is very active in undertaking scientific investigations into the dynamics of health and environment interactions. In the areas of air quality, water quality and soil quality it is essential that basic data are available to assist in evidence-based decision making. The sciences of toxicology and epidemiology are the critical components of the risk management process utilized in Health Canada.

3. Major Groups: The Canadian Public Health Association is working with Health Canada to undertake a conference in 1997 on Intersectoral Cooperation on Health For All. Organizations such the Canadian Institute of Public Health Inspectors and the Canadian Water and Waste Water Association are consulted on specific health and environment issues. In collaboration with Environment Canada, Health Canada coordinated a multistakeholder advisory committee to identify priority substances to be assessed under CEPA. Health Canada has recently produced a paper titled, *Forging A Collaborative Population Health Framework for Health and the Environment*, to stimulate discussion with interested groups.

4. Finance: Health Canada utilizes resources for a number of health and environment activities that comprise part of its ongoing programs. Most of these reside in the Health Protection Branch. Provincial governments also expend resources, within their Ministries, on health and environment programs. The federal government allocated approximately (Cdn) $100 million in the 1991-92 to 1996-97 period for the specific activities under the Action Plan on Health and the Environment.

5. Regional/International Cooperation: Canada is an active partner in the programs of the World Health Organization and the Pan American Health Organization. The International Program on Chemical Safety utilizes the expertise within Health Canada on the risk assessment of chemicals. Health Canada, Environment Canada and IDRC have provided resources to host the Second Meeting of the Intergovernmental Forum on Chemical Safety, to be held in Ottawa in February, 1997.

STATISTICAL DATA/INDICATORS				
	1980	1990	Latest 199_	
Life expectancy at birth Male Female	 70.5 78.1	 73.4 80.2	 74.9 81.0	
Infant mortality (per 1000 live births)	12	7	6.3	
Maternal mortality rate (per 100000 live births)	7	5[1]	3	
Access to safe drinking water (% of population)			100 91% (Aboriginal Canadians)	
Access to sanitation services (% of population)			99 94%(Aboriginal Canadians)	
Other data: 1 = 1988				

AGENDA 21 CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT

NATIONAL PRIORITY:	
STATUS REPORT: Canada is committed to promoting the development of more sustainable human settlements in which well planned communities and quality housing contribute to a healthy environment, a prosperous economy and an improved quality of life. Achieving the goal of sustainable human settlements requires new approaches, particularly during these times of fiscal restraint. One of the key challenges is to plan and manage communities that will be more viable in economic, social and environmental terms. New models of community design have been developed that encourage more environmentally responsible planning. This includes a variety of housing types and forms that reduce land requirements and encourage public transit, walking and cycling as alternatives to automobile use. Many communities are encouraging land-use intensification and providing for a greater mix of dwelling types - including attached houses, accessory apartments and infill housing. Better use is being made of existing infrastructure and economically productive communities planned so they do not demand transportation systems that consume non-renewable resources and contribute to air pollution. Finally, affordable solutions are being developed that respond to changing demographics and a diversity of needs and lifestyle preferences. Canada is looking at ways to plan and build housing that consumes resources more efficiently, makes more effective use of land, and is also safe, healthy and affordable for all Canadians. Initiatives are under way to improve energy efficiency, conserve water and reduce indoor contaminants, control moisture and improve ventilation. Canada is also looking at ways to make houses and the way they are built more efficient. Improving energy efficiency through better building practices and passive solar design, exploiting ambient energy through new technologies, such as ground-source heat pumps, and reducing the consumption of fresh water in homes, have all been the subjects of extensive research in recent years. Another high priority has been reducing the volume of residential construction waste and encouraging more recycled content in building materials. Active for over a decade in indoor air quality research, Canada is promoting homes that can be made "healthier" for their occupants. Areas of research include material emissions and spillage of combustion products from heating appliances, mould and moisture problems.	

Cross-Sectoral Issues

1. Decision-Making Structure: There are many stakeholders involved with housing and human settlements in Canada. These include the three levels of government - federal, provincial and municipal - and other actors, such as the private sector, non-governmental organizations (NGO's) and community-based organizations. Canada Mortgage and Housing Corporation (CMHC) is Canada's federal housing agency. CMHC is involved in the development, funding and operation of national social and market housing programs and the provision of mortgage insurance, as well as the support of research that improves market efficiency and creates better living environments. Canada's ten provincial and two territorial governments are responsible for the regulation of urban and rural development in most areas through planning legislation, and the regulation of building and housing standards through building and health codes. Municipal governments are generally responsible for regulating the use of land and the provision of hard services (e.g. local roads, water and sewer lines), often with the support and direction of senior governments. Through agreements between federal, provincial, territorial and municipal government, as well as non-profit organizations, the delivery and administration of assisted housing programs and projects is shared. Discussions are currently underway to further rationalize the management of existing social housing resources.

2. Capacity-Building/Technology Issues: Over the past 50 years there has been continuous improvement in the technical quality of Canada's housing, including improved products and materials, advances in construction systems and methods, and the wide-spread dissemination of this information through educational facilities and other channels. In particular, the increased use of computer assisted design, improved prefabrication, better ventilation and the extensive use of power tools on the building site have all contributed to more efficient building systems and construction practices.

3. Major Groups: A number of national, regional and local organizations and committees have been established to coordinate research and information transfer activities related to Canadian human settlement efforts, such as the National Housing Research Committee, the Intergovernmental Committee on Urban and Regional Research, the Technical Research Committee of the Canadian Homebuilders Association, the Institute for Research in Construction (NRCan) and Federal/Provincial/Territorial Ministers meetings. The municipal, non-profit community-based and co-operative housing sectors have all played an important role in sustainable community development and management.

4. Finance: Canada's system of financing residential construction is part of the larger capital market. Mortgage interest rates fluctuate in line with general interest rate fluctuations and capital is generally readily available. There are a number of mortgage vehicles available, as well as loan guarantees and mortgage insurance.

5. Regional/International Cooperation: Human settlements and urban development are issues of increasing concern to Canada's international cooperation initiatives. Support for sustainable human settlements in developing countries is provided through CIDA, which encourages bilateral and multilateral partnerships as well as the efforts of Canadian civil society. CIDA believes that sustainable development can not be achieved without due consideration to human settlements, especially in urban or rapidly urbanizing areas. IDRC also supports responses to development problems through scientific research that generates knowledge and policy options for sustainable cities. CIDA, IDRC and their partners have created programs and projects designed to reduce poverty in cities, to improve environmentally sound municipal management, urban facilities and infrastructure and quality of life in urban and peri-urban environments.

STATISTICAL DATA/INDICATORS

	1990	1995	
Urban population in % of total population	76.6	76.7	
Annual rate of growth of urban population (%)	1.4	1.4	
Largest city population (in % of total population)	13.6	15.2	
Other data			

AGENDA 21 CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING
(See pages vii and viii at the beginning of the profile)

NATIONAL PRIORITY:

STATUS REPORT: In 1994, the federal government emphasized the need for an integrated approach to social, economic, environmental, and foreign policy in the Speech from the Throne that opened the federal Parliament. A series of recent legislative and policy initiatives have given practical meaning to this commitment. All governments have developed plans that take into account the shift to sustainable development.

Sustainable development was incorporated into the new mandates of the federal ministers of Industry, Agriculture and Agri-Food, and Natural Resources in 1994. Sustainable development has also been built into key statutes such as the Canadian Environmental Assessment Act, the North American Free Trade Agreement Implementation Act, and the Canadian Environmental Protection Act.

In 1995, the Canadian Environmental Assessment Act came into force to integrate environmental considerations into all federal project planning. The Act requires that an environment assessment be completed prior to substantive action on any federal project.

Legislation establishing a Commissioner of the Environment and Sustainable Development received Royal Assent in December 1995 with the first Commissioner appointed on July 2, 1996. The first "Green Report" to the House of Commons is expected to be tabled by a federal department in February 1997. Within two years, all federal ministers will be required to present sustainable development strategies for their departments to Parliament. To assist departments in the preparation of these strategies, the federal government has released "A Guide to Green Government". It includes objectives, as well as policy and management tools, to aid the transition to sustainable development. It also notes that departmental sustainable development strategies must be comprehensive, results-oriented, and prepared in consultation with partners. Preparation and implementation of these departmental strategies will require innovation both in policy and management terms, and a commitment to continuous improvement.

Nearly all provincial and territorial governments have, or are in the process of developing, sustainable development or conservation strategies. Each pursues its own approach to environment-economy integration.

Over the last two decades, all provinces and one territory also established environmental assessment legislation. Most require public involvement and provide for an independent body to examine complex or high profile environmental assessments. Jurisdictions often provide for mediation and conflict resolution throughout the assessment process.

Provincial and territorial governments have also undertaken a number of other initiatives toward integrated decision making. The Commission on Resources and Environment in British Columbia, for example, uses regional land use plans and public participation in decision-making to resolve conflicts and to advance a comprehensive, sustainable approach to natural resources development in the province. Also, in 1992, Alberta consolidated eight environment-related statutes into the Alberta Environmental Protection and Enhancement Act that provides an integrated approach to the protection of air, water and land. Quebec's Ministry of Natural Resources and Ministry of Environment and Wildlife have developed recommendations on integrated resource management, and its application for forestry, wildlife, water and landscapes.

Many companies are designing environmental management systems (EMS) to integrate environmental considerations into their activities. In 1994, KPMG management consultants carried out a survey of Canadian companies, hospitals, municipalities, universities and school boards. Some 69 percent reported EMSs in place. Business associations are also promoting sustainable development through improved decision making processes.

Although considerable effort has been made to integrate the environment into decision-making, it is sometimes difficult to ascertain the extent of real progress and the effectiveness of activities towards sustainable development. Concrete goals, targets and indicators require further development and application.

Cross-Sectoral Issues

1. Decision-Making Structure: Public consultation is a legal requirement under federal and many provincial environmental laws, such as: the Canadian Environmental Protection Act, the Canadian Environmental Assessment Act, the Quebec Environmental Quality Act, and the Alberta Environmental Protection Enhancement Act.

Provincial governments have also put in place consultative mechanisms to foster effective public responses to sustainable development challenges. Both New Brunswick, through its Commission on Land Use and the Rural Environment, and British Columbia, through the Commission on Resources and Environment, involve citizens, communities and organizations in resource planning and integrated environmental management. In Quebec, Regional Environmental Councils created by nongovernmental organizations are facilitating consensus building among stakeholders. Businesses are increasingly supportive of the concept of multi-stakeholder consultative initiatives and in fact in two areas: forestry and mining, have used model forms of consultative processes very effectively.

2. Capacity-Building/Technology Issues: One form of exportable practice is the Model Forest Network which provides enormous, and exciting possibilities to develop sustainable forest management techniques across all eco-systems in Canada, Mexico and the Russian Federation.

3. Major Groups: Governments have increased their efforts to find effective means of involving major groups and citizens in shaping the sustainable development agenda. Forums that bring together representatives of many different groups have become important vehicles in these consultative processes. The intent of such forums is to encourage debate and consensus building that crosses traditional major group lines. Businesses are also reaching out in innovative, constructive ways to other major stakeholders.

4. Finance: No information

5. Regional/International Cooperation The International Model Forests Program, described in detail under Chapter 11, involves integrated approaches to decision-making and the involvement of many stakeholders.

AGENDA 21 CHAPTER 9: PROTECTION OF THE ATMOSPHERE

NATIONAL PRIORITY:

STATUS REPORT:
The Montreal Protocol and its Amendments

- Montreal Protocol (1987) ratified.
- London Amendment (1990) ratified.
- Copenhagen Amendment (1992) ratified.

Canada will host the next meeting of the Parties to the Montreal Protocol in Montreal in 1997, the tenth anniversary of the Protocol.

United Nations Framework Convention on Climate Change

- UNFCCC was ratified in 1992.
- The latest report to the UNFCCC Secretariat was submitted in 1994. Canada is currently preparing its next report to be submitted in April 1997.

Additional comments relevant to this chapter

Canada's National Action Programme on Climate Change (NAPCC) sets the course for meeting Canada's commitments under the Framework Convention on Climate Change in the areas of climate change mitigation, adaptation, research and education, and international cooperation. All provincial and territorial governments have now committed to the NAPCC and will be reporting on their initiatives to reduce emissions of greenhouse gases. The Voluntary Challenge and Registry (VCR) Programme is a key element of the NAPCC. For example, the government of Quebec has adopted a programme, EcoGeste which registers the voluntary measures adopted by diverse organizations to stabilize their greenhouse gas emissions to their 1990 levels.

Most of this activity relies on more efficient use of energy resources and substitution with renewable sources where feasible. For example, Canada's "Efficiency and Alternative Energy Programme" consists of thirty-seven regulatory, information, and research and development initiatives. It encourages, for example, using model National Energy Codes for buildings and houses, setting voluntary energy-efficient targets, and fostering the adoption of emerging, more energy-efficient technologies and alternative transportation fuels. The National Biomass Ethanol Programme is designed to increase ethanol use through such instruments as financial support for vehicle conversion to natural gas. Also, the use of auto propane to provide markets for excess refinery by-products is being encouraged in Newfoundland and New Brunswick

Several Canadian municipalities, in order to reduce their greenhouse gas emissions by 20 percent from 1990 levels by 2005, have formed the "20% Club" to share cost-effective strategies for mitigation. Through efforts such as these, Canada intends to stabilize its emissions of greenhouse gases at 1990 levels by the year 2000 and to develop sustainable options to achieve further progress

Canada's response to the prevention of stratospheric ozone depletion includes strong regulatory controls on use, a ban on release, certification of technicians, research, monitoring, and public information and awareness components on ozone-depleting substances. Canada is implementing increasingly stringent controls beyond those agreed to in Copenhagen 1992.

Cross-Sectoral Issues

1. Decision-Making Structure: Environment is a shared jurisdiction. The foci for the federal Department of Environment are on pollution prevention, ecosystem monitoring and conservation, weather, UV-b and other environmental predictions, and research on atmospheric processes and climate change impacts assessments. The Canadian Council of Ministers of the Environment is the major intergovernmental forum for discussion and co-operation on environmental issues of national, regional and global concern.

2. Capacity-Building/Technology Issues: Canada helps to build capacity in developing countries in order to promote sustainable development. Canadian researchers in atmospheric sciences are focusing on the mechanisms responsible for ozone depletion at mid-latitudes, the effects of ultraviolet-b (UV-B) radiation effects on humans, animals and biota and the adaptive capabilities of various ecosystems to atmospheric change and the impacts of these changes on a wide range of economic activities.

3. Major Groups: In Canada, governments have increased their efforts to find effective means of involving major groups and citizens in shaping the sustainable development agenda. Air issues are being addressed through partnerships between governments, the private sector, non-governmental organizations, communities, universities and other institutions. Under the Joint Ministers of Environment and Energy, the National Air Issues Coordinating Committee seeks to ensure the integration of policy and science surrounding air issues through broad consultations with stakeholders including Environmental non-Governmental Organizations and the public. The Climate Research Network links government and university researchers as a strategic tool for our assessment of climate change and variability.

4. Finance: No information

5. Regional/International Cooperation: Regionally, Canada addresses Transboundary air pollution problems through the USA/Canada Air Quality Accord and the proposed Canada - US Virtual Elimination Strategy which calls for elimination of those persistent toxic substances that contribute to the pollution of the Great Lakes Basin. Canada's scientific expertise is shared through the Inter-American Institute for Global Change Research, a hemispheric network of research centres.

Internationally, the Canadian Global Change Program (CGCP) of the Royal Society of Canada provides a link to the International Geosphere-Biosphere Programme and the Human Dimensions of Global Change. Canada contributes scientific and technical expertise to the Inter-Governmental Panel on Climate Change (IPCC), the World Meteorological Organization; hosts the Secretariat for the Convention on Biological Diversity in Montreal, the Secretariat for the Multilateral Fund for the Montreal Protocol and maintains the World Ozone Data Centre in Toronto.

Canada is leading or actively participating in international initiatives to address concerns with Persistent Organic Pollutants (POPs) and Heavy Metals under the United Nations Economic Commission for Europe's Convention on Long-Range Transport of Air Borne Pollutants, the United Nations Environment Programme (UNEP), the Global Programme of Action for Protection of the Marine Environment from Land-Based Activities (the Washington Declaration), and the NAFTA Commission for Environmental Cooperation. These hazardous air pollutants have been implicated around the world as having a significant impact on human and environmental health and are emerging as global issues of concern.

STATISTICAL DATA/INDICATORS				
	1980 Kilotonnes	1990 Kilotonnes	1995 Kilotonnes	
CO_2 emissions (eq. million tons)	403,000	464,000	502,000	
SO_x "	4,612	3,296		
NO_x "	1,716	2,062		
CH_4 "	2,600	3,100	3,700	
Consumption of ozone depleting substances (Tons)[1]	16.88	16.6	5.8	
Expenditure on air pollution abatement in US$ equivalents (million)	N/A	N/A	N/A	

Other data
1 = Note; ODS data provided is Total Weighted Quantity. The Total Weighted Quantity equals the unweighted quantity by ozone depleting potential (ODP).

The term "Consumption" equals (production minus amount used as feedstock in the manufacture of other chemicals minus destruction) plus Imports minus Exports.

The total includes;
(CFC) Chlorofluorocarbons (CFC-11, 12, 13, 113, 114 and 115)
(Halon) Bromochlorofluorocarbons (Halon 1211 and 1301)
(MCF) Methyl Chloroform (1,1,1-trichloroethane)
(CTC) Carbon Tetrachloride
(HCFC) Hydrochlorofluorocarbons (HCFC-22, 123, 124, 141b and 142b)
(MBr) Methyl Bromide (only for 1995)

AGENDA 21 CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES

NATIONAL PRIORITY:	
STATUS REPORT: The planning and management of land resources is evolving to reflect the economic value of land to owners and users and the impact of land use on other people and the environment. Problems and issues associated with traditional approaches to land use planning include the need for more provincial and often international direction that does not interfere with local autonomy; settlement and resource land use planning; relationships among provincial, regional and local land use planning and program implementation; and coordination and integration of existing programs and policies. When combined, these problems and issues point to the need for a strategic and integrated approach to land use planning. Five provinces have developed provincial land use policies and implementation strategies: British Columbia, Manitoba, Ontario, Prince Edward Island, and Quebec. In the Northwest Territories and Yukon, regional land use planning processes are being put in place through the implementation of land claims agreements with Aboriginal people. Many integrated resource and land management planning efforts that are under way at the provincial level include strategies for wildlife, parks and protected areas, and forestry. For example, Ontario and Alberta have structured approaches to resource land planning. British Columbia's Commission on Resources and Environment (CORE) is another excellent example of developing a more open process to examine multiple land resource issues and goals. Federal and provincial governments are using an ecosystem framework to provide a road map to more detailed information in various resource databases. The ecological framework will help in the assessment of current land use and resource management practices across Canada. For example, there are currently ten large-scale environmental studies, funded by Environment Canada's Eco-Research Program, focusing on a cross-disciplinary approach to ecosystem management and providing a series of sustainable development models on which to develop, test, and recommend management options. One major challenge to the sustainable management of land resources is the management of urbanization, especially its effects on agricultural and other biologically productive land. As cities grow, land use conflicts will become more acute if they are dealt with through traditional approaches and ways of valuing land. Data requirements for land resource/use planning are growing as are the abilities to analyze, integrate and communicate such information. In contrast, many of the major land resource and land use gathering programs which supported these efforts no longer exist.	

Cross-Sectoral Issues

1. Decision-Making Structure: Federal and provincial/territorial governments all have roles in land use and management. Except for federally controlled lands, the provincial governments have constitutional authority over land use law and policies. Much of that power is delegated to municipalities, which set local land use rules and priorities, although provincial governments may coordinate land use activities among municipalities. The provinces and territories also manage their own lands.

In 1992, British Columbia set up the independent Commission on Resources and Environment (CORE) to advise government on the development of a broad provincial land use strategy. To this end, CORE developed a provincial Land Use Charter that sets out principles of sustainability to guide natural resource planning and management. This charter was adopted in principle by the provincial government in 1993.

2. Capacity-Building/Technology Issues: Technological capacity related to land use planning is improving through initiatives such as the RADARSAT satellite and tracking system. Since completion in 1995, it has been used for such resource and environmental management as monitoring crop conditions, conducting mineral exploration, and detecting forest fires. Two command stations have been built, one in Montreal and one in Saskatoon.

3. Major Groups: With Aboriginal people gaining effective control of larger areas of land, they are using different approaches to resource management. They draw on their traditional ecological knowledge, non-Aboriginal knowledge, and information technology. For example, the Traditional Dene Environmental Knowledge Pilot Project in Hay River, Northwest Territories, has been a major contributor to methods of documenting knowledge (including non-Aboriginal science), community participation, training, and partnering with other institutions.

Many Aboriginal governments are developing and using geographic information systems to plan and manage lands and resources. These systems are particularly helpful as tools to integrate traditional and spiritual values into land use decisions.

4. Finance: No information

5. Regional/International Cooperation: As a result of recommendations arising from the North American Workshop on Environmental Information hosted by Mexico in October 1993, Environment Canada took the lead in a working group to develop a framework for sustainable resource use and management. This includes documentation of ecosystem approaches applied or tested in Canada, the United States, and Mexico; application of common criteria for ecosystem classification and harmonization; development of a North American ecological map and description; and a state of the environment profile using a protected areas theme.

International development agencies such as the IDRC support the efforts of developing countries to address land use issues. For example, they are conducting research to find better ways to address pressures on land resulting from local population growth.

AGENDA 21 CHAPTER 11: COMBATING DEFORESTATION

NATIONAL PRIORITY:

STATUS REPORT: There are 417.6 million hectares of forest in Canada, 10 % of the world's forests. Commercial timber production occurs on only 25 % of this total area, some 119 million hectares. Logging is excluded by policy or legislation, from another 50 million hectares of Canada's timber productive forests. The shift from management of forests for sustained fibre yield to forest ecosystem management has fundamentally changed the way forest issues are examined, how policy is formulated, and how programs are designed and implemented.

Many provincial initiatives typify the shift to ecosystem-based forest management. These include legislated requirements for integrating economic, environmental and social interests in forest management (e.g. employment, wildlife habitat, biodiversity, non-timber forest products and local communities); stricter environmental protection measures; forest protection strategies including silvicultural methods and the use of biological pest control products; decrease in the size of timber harvest areas; changes in timber harvesting methods to promote natural regeneration; increased royalties; adoption of a framework of criteria and indicators; and integrating natural resource inventories.

An aspect of sustainable forest management that continues to evolve is decision-making. Public participation is now legislated in most provinces. At the same time, debate and some conflicts continue regarding the acceptability of some forestry practices and the need to sustain local communities and overall economic activity. Wood and paper product companies have initiated corporate environmental reporting, adopted voluntary codes of practice and increased their capacity to monitor their own performance and compliance with regulations. They have invested heavily in pollution reduction, virtually eliminating dioxins and furans from pulp and paper mill effluents. New equipment for high-yield pulp, composite panels and recycled papers spare wood fibre. The Canadian Standards Association has established a voluntary certification standard to identify timber produced under sustainable forest management regimes. The Forest Stewardship Council is also promoting a voluntary certification system, linking products to performance throughout product life-cycles.

Research continues to increase our understanding of forest ecosystem functions and the impacts of human activities on them. This is leading to the development of more environmentally benign and cost-effective practices. The nature of this research and the potential spin-offs foster R&D partnerships.

Canada's principal mechanism for implementing UNCED forest commitments is its National Forest Strategy. *Sustainable Forests: A Canadian Commitment* addresses nine strategic subject areas through close to one hundred actions. An independent mid-term evaluation concluded that Canadians remain strongly committed to the strategy. A final evaluation, again at arm's length, will be completed by May 1997. A successor strategy will be ready by the end of 1997.

In 1994, the federal House of Commons Standing Committee on Natural Resources recommended that forest research focus on sustainable development, that better information be made available on Canada's forests and their management, and that Canada continue its international efforts to promote sustainable forest management worldwide. The current federal forest research programme fully reflects those recommendations.

Following extensive consultations, the Canadian Council of Forest Ministers (CCFM) released a scientifically-based framework of criteria and indicators of sustainable forest management in October 1995. *Defining Sustainable Forest Management: A Canadian Approach to Criteria and Indicators* identifies 6 criteria and 83 indicators which express the values held by Canadians and their views on forests and their use. Currently, efforts are focused on compiling information and data on the indicators, and developing approaches to fill identified gaps. A first report will be released in January 1997. In addition, the CCFM is developing an action plan to strengthen Canada's future reporting.

The report, *OECD Environmental Performance Review: Canada*, released in November 1995, noted that: the renewal of Canada's forests is secure as a result of policies that have been in place for some time; private companies have made substantial progress in reducing pollution; and public participation in decision-making is remarkable. The report also urged the continued development of alternative silviculture methods and the expansion of scientific knowledge of the biodiversity of Canada's forests.

Cross-Sectoral Issues

1. Decision-making structure: The provincial governments are stewards of 71% of Canada's forests, the federal and territorial governments together manage 23% and 6% belongs to 425,000 private landowners, concentrated in Eastern Canada.

Forest management in Canada is a matter of provincial jurisdiction with each province and territory having its own set of legislation, policies and regulations. In the last few years, they have undertaken several initiatives to implement the principles of sustainable forest ecosystem management, including the need for full participation of partners and interest groups in the design of strategies and integrated land use plans.

The Canadian Council of Forest Ministers (CCFM), consisting of the thirteen federal, provincial and territorial ministers responsible for forests, is the primary mechanism for cooperation in national and international forestry matters. It provides leadership and direction for the stewardship of Canada's forests.

2. Capacity building and technology issues: The Canadian Forest Service (CFS) of Natural Resources Canada manages a national forest research programme encompassing ten (10) strategic areas: forest health; climate change; forest biodiversity; forest ecosystem processes; effects of forest practices; landscape management; fire management; pest management methods; tree biotechnology and advanced genetics; and socio-economic research. To facilitate partnerships and alliances, a national network is being established for each of those subject areas. The networks are also responsible for technology transfer to resource managers and other clients, and maintain close linkages with national and global policy priorities and with the evolution of international agreements and commitments.

Collaborative research agreements for the commercialization of biological herbicides is but one example of intellectual property developed by the CFS that has been transferred successfully to the private sector. CFS fire management activities are now linked to the G-7 initiative Global Emergency Management Information Network (GEMINI) and a fire management system has been developed for the Russian Federation.

3. Major groups: As noted previously, major groups are consulted and participate in decision-making processes at national, provincial/territorial and local levels. Arrangements vary from voluntary mechanisms stemming from adopted policy to requirements based in legislation.

4. Finance: Since 1983, public and private annual expenditures in forest management have averaged CA$ 2billion.

5. Regional and international cooperation: Since Canada committed at UNCED to provide initial funding to expand an international network of model forests, interest in the concept continues to grow. More than 25 countries are considering joining the network which presently comprises 10 sites in Canada, 2 in Mexico and 1 in the Russian Federation. In addition, three Adaptive Management Areas in the United States are exploring linkages with the model forest program.

Internationally, Canada continues to participate in various exercises related to criteria and indicators for the sustainable management of boreal and temperate forests, particularly those outside Europe. As host of the Liaison Office for the Montreal Process, Canada provides the support and impetus for implementation, at the national level, of the criteria and indicators that the twelve member countries endorsed in early 1995.

STATISTICAL DATA/INDICATORS			
	1985	1990	1994
Forest area (ha)	453 M	453 M	417 M (changes in classification)
Forest area capable of producing commercial timber (ha)			212M
Forest area managed for commercial timber production (ha)			119 M
Protected forest area (ha)			
by legislation			26 M
by policy			24 M
total			50 M
Roundwood production (solid volume of round-wood without bark in m^3)	168.7 M	162.5 M	182.0 M

AGENDA 21 CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT

NATIONAL PRIORITY:

STATUS REPORT: Chapter 12 of Agenda 21 concerns monitoring regions prone to desertification and drought in order to develop comprehensive drought relief schemes and integrated anti-desertification programs to eradicate poverty. Canada is responding primarily through its participation in the negotiation and implementation of the UN Convention to Combat Desertification. By ratifying the Convention on December 1, 1995, Canada demonstrated a strong commitment to combatting this world-wide problem. Canada is also offering to host the Permanent Secretariat of the Convention in Montreal.

The Canadian International Development Agency (CIDA) was Canada's lead agency in the negotiations. CIDA ,along with the International Development Research Centre (IDRC),will implement the Convention on Canada's behalf. Current initiatives under the Convention respond to the Urgent Action for Africa Resolution supporting preparation of National Action Programs and Public Awareness Raising. Both CIDA and IDRC have ongoing programs addressing land degradation in dryland areas.

IDRC's activities focus on research and knowledge sharing. Programming includes: fostering local community participation through sponsored workshops, research on coping and adaptive strategies, indigenous production, and social and environmental indicators. Research is also taking place on integrated decision-support systems and information networks for future reporting. CIDA supports United Nations organizations and international research networks that deal with desertification issues. It also provides bilateral funding for research on pest control, agriculture, and drought mitigation.

Some of CIDA's programming deals directly with the problem of land degradation by focusing on natural resource management techniques. In Burkina Faso, programs focus on improving soil fertility through composting, drought preparedness, small scale irrigation, and plant and tree protection. Action on desertification often reflects the place of poverty alleviation as a core programming theme for CIDA. CIDA undertakes programming which focuses on education, popular participation and the promotion of alternative livelihoods. In China, CIDA is running a desertification related program focusing on alternative livelihoods and income generation to reduce poverty and improve the situation of women.

A component of IDRC's programming is directly in support of the Convention. It is intended to support the processes of selected African countries' preparation of National Action Plans. Support programmes of this type are currently underway in Burkina Faso. CIDA is exploring the use of an umbrella program in the West African region which would permit support to a variety of small scale national initiatives related to the consultative processes for the preparation of National Action Programs. CIDA supports the efforts of Southern Africans in a community drought mitigation program. In addition, Canada also provides support through our multilateral partners.

Other CIDA programs focus on the role of grass root organizations in the process. In Burkina Faso and Mali, CIDA is working with the Canadian NGO Solidarité-Canada-Sahel (SCS) and local non-governmental organizations to encourage communities to get involved in the preparation of their countries' National Action Programs. In partnership with CIDA, other organizations such as CARE Canada and the Unitarian Service Committee of Canada (USC -Canada) work with their counterparts in developing countries to encourage and promote action at the grass-roots level. CIDA supports the work of the Developing Countries Farm Radio Network (DCFRN). This organization uses radio broadcasts and the distribution of reading material through its network in Africa and around the world to provide a forum for partners to increase public awareness and initiate dialogue.

Canada has been raising domestic public awareness about international desertification. Supported by CIDA or through SCS and USC-Canada, activities marked World Day to Combat Desertification in 1996 across the country. In addition, public service announcements in French and English were also produced to air on national television to reach out to the Canadian public.

Cross-Sectoral Issues

1. **Decision-Making Structure:** No information

2. **Capacity-Building/Technology Issues:** No information

3. **Major Groups:** No information

4. **Finance:** No information

5. **Regional/International Cooperation:** No information

STATISTICAL DATA/INDICATORS

	1980	1990	Latest 199_	
Land affected by desertification (Km^2)				
Other data				

AGENDA 21 CHAPTER 13: MANAGING FRAGILE ECOSYSTEMS: SUSTAINABLE MOUNTAIN DEVELOPMENT

NATIONAL PRIORITY:

STATUS REPORT: Canada does not face population pressures in its mountain regions. Nonetheless, economic activities in mountain regions have come under increased scrutiny, particularly forestry and mining. In some regions resort development, ecotourism, and related support activities are high growth sectors. In addition, transportation and utility corridors utilize mountain passes that are often critical wildlife habitat.

There is a growing reliance on integrated land use and resource management planning. These practices help ensure that development in Canada's mountain ecosystems is environmentally sustainable. Watershed planning is one such mechanism, traditionally used at the community level and now increasingly used at a regional level.

In British Columbia, land and resources management plans (LRMP) are being developed as a means of resolving land and resources-based conflicts in all regions of the province, including mountain ecosystems. LRMPs have been developed through a multi-stakeholder process for several mountain regions, such as the east and west Kootenays. These plans take into consideration all aspects of sustainable development: commercial resource use; protected areas; development strategies; and certainty in land use designation. When stakeholders have agreed to an LRMP, it is forwarded to government for approval and implementation.

Mountain areas are well represented in Canada's national parks system and in the parks system of British Columbia, Alberta, and Yukon. In November 1992, Canadian parks, environment, wildlife, and forestry ministers endorsed a historic commitment to complete a network of protected areas representative of Canada's land-based natural regions by the year 2000. Federally, that commitment entails representing each of 39 natural regions in the national parks system. Ten of these regions are predominately mountainous. Of these, eight are represented by fourteen national parks (two regions are represented by two national parks and another by five). Of the two mountainous natural regions unrepresented in the national parks system, one is represented in the provincial parks system and a study is assessing the feasibility of a candidate national park in the other. Seven of Canada's mountain national parks have been judged significant enough globally to be designated UNESCO World Heritage Sites.

Parks encourage cooperative regional land use planning and management and environmental monitoring. The broader ecosystem approach to the management of protected areas is evident in the management of several of Canada's mountain national parks. Waterton Lakes National Park, for example, is the core of one of Canada's six biosphere reserves. Designated under the UNESCO Man and the Biosphere Programme, each biosphere reserve - which includes a core protected area, a buffer sone, and a cooperative zone where people live and work - is intended to serve as a demonstration area integrating the conservation of biodiversity with sustainable development.

Canadian Heritage Parks Service, is a partner with the Canadian Forest Service, of Natural Resources Canada in four of ten model forests, such as the Foothills Model Forest outside Jasper National Park. Through this co-operative programme, the Parks Service is working to support the maintenance of sustainable regional landscapes that require preservation efforts, as well as activities beyond park boundaries.

With the growing emphasis on ecosystem management, the Parks Service and other partners are developing and applying methods for assessing ecological integrity: monitoring, trend analysis, and cumulative impact assessment tools. Test studies are currently being conducted in seven national parks, including two mountain parks.

Legislation requires the federal government to report on the state of its national parks. To give a full picture of the state of ecosystems, a survey was conducted in 1992 to identify those internal and external stresses having an ecological impact on the national parks. In the mountain parks, forestry visitor/tourism facilities, utility corridors, and to a lesser extent, urbanization and hydro-electric development were commonly identified as having an impact on park ecology. This, in many instances, simply confirms the integration of the park and its surrounding ecosystem and the need to plan for and manage all protected areas within a broad regional context.

Cross-Sectoral Issues

1. **Decision-Making Structure:** No information

2. **Capacity-Building/Technology Issues:** No information

3. **Major Groups:** No information

4. **Finance:** No information

5. **Regional/International Cooperation:** No information

AGENDA 21 CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT

NATIONAL PRIORITY:

STATUS REPORT: The Canadian vision of sustainable agriculture was expressed in *Growing Together*, the discussion paper that initiated the comprehensive Agri-Food Policy review in 1989. The vision provided a framework to integrate economic, social and environmental goals and was endorsed by governments and a variety of stakeholders. Building on this framework, the 1990 Report of the Federal/Provincial Agriculture Committee on Environmental Sustainability translated the concept of integration into recommendations that include adjustments to agricultural practices, and policy and programme reform to strengthen economic viability and environmental sustainability. The Report also identified eight main environmental and natural resource issues facing Canada's agriculture and agri-food sector: conservation of soil resources, surface and groundwater quality, water quantity management, sustainable management of wildlife habitat, air quality and climate change, energy efficiency, pollution and waste management, and conservation of genetic resources.

In order to address environmental issues in agriculture effectively, producers, processors, and governments must work together. Federal/provincial agreements on environmentally sustainable agriculture are helping producers design and implement activities focused on issues such as water quality, waste management, and soil conservation. Farmers are forming rural conservation clubs and developing environmental farm plans in Ontario, Atlantic Canada, and Quebec. In the Prairie Provinces,(Manitoba, Saskatchewan and Alberta) the farmer-owned Wheat Pools (grain marketing cooperatives) have developed guides to environmental farm planning to be used in conjunction with other on-farm conservation planning processes. These initiatives help farmers identify their successes in effective environmental management and develop work plans to address potential risks. It is projected that from 5,000 to 6,000 of these plans will be completed in Ontario alone by the year 1997. Alberta has launched a campaign, *Growing Alberta*, to increase the awareness of the impact of agriculture on the environment and the economy. Producers in a number of provinces are developing management standards that guide the implementation of environmental stewardship. For example, British Columbia and Alberta have established codes of practice for the management of animal waste, and Ontario has produced 10 booklets on Best Management Practices. In Quebec, initiatives include a Sustainable Development Policy for the agricultural sector and new regulations respecting the reduction of agricultural pollution. A component of the St. Lawrence Vision 2000, an action plan between the governments of Canada and Quebec designed to conserve, protect and restore the St. Lawrence River, supports projects that contribute to reducing agricultural pollution.

Industry has developed tools for environmental stewardship, such as programmes to reduce environmental impacts and health risks in the agri-chemical industry, publications promoting improved water quality, and videos on best management practices. Canada has instituted a number of soil conservation and habitat conservation programmes over the years, such as the Permanent Cover Programme, that will ultimately convert some half-million hectares of marginal, erosion-prone land in parts of western Canada from annual crops to sustainable land uses under permanent cover. In most provinces, Federal Green Plan programs are addressing the links between pesticides and water quality, wildlife and biodiversity. Part of a new federal agricultural adaptation initiative, that is managed by farmers, is addressing issues such as water quality and waste management.

In the future, farmers will continue their shift to sustainable management practices and industry will improve its ability to self-regulate through initiatives such as environmental codes of practices and self-assessment guides. Industry and governments will continue to promote environmental sustainability and improve the understanding of the links between the sector's activities and their impacts on the environment. Provincial and federal governments will continue to work towards ensuring that policies and programs contribute to sound environmental practice by, for example, adapting their initiatives to the ecosystem approach and addressing issues at the rural-urban interface. Agriculture and Agri-food Canada has completed a national consultative process to examine the challenges of environmental sustainability facing the sector and to develop a federal departmental strategy and action plan. A new *Strategy for Environmentally Sustainable Agriculture and Agri-Food Development in Canada*, that will provide the key underpinning for the department's post-Green Plan environmental activities, will be realised early in 1997. It will reflect an increased emphasis on pollution prevention and environmental stewardship among farmers and agri-food industries.

Cross-Sectoral Issues

1. Decision-Making Structure: The key decisions about investing in more environmentally sustainable practices are being made at the farm level. As such, it is the farm sector that must ultimately decide on how to protect the resources upon which it relies and in so doing, minimize environmental degradation.

2. Capacity-Building/Technology Issues: Research efforts by governments, universities and industry, through biotechnology as well as conventional techniques, include the development of disease- and pest-resistant crop varieties, reduction of pesticide use, and the development of practices that integrate disease and pest control with crop and soil management practices (integrated pest management). Through the Green Plan, the federal government has established new projects to strengthen the national capacity to conserve plant and animal genetic resources. Other federal efforts to support sustainable agriculture include the development of agri-environmental indicators that help evaluate the sector's environmental performance, provide information on key trends, and facilitate the integration of environmental considerations into the sector's decision-making processes.

3. Major Groups: Industry and public advisory committees play a key role in working with governments to determine priorities and establish programmes. Farm organizations, conservation groups, and the larger agricultural extension community are driving forces behind the sector's plans for adopting best management practices that reduce environmental impacts, such as using pesticides more efficiently and shifting to conservation tillage practices. Certain non-governmental organizations are working to accelerate development and implementation of sustainable agriculture practices and to promote awareness of the need for an agriculture that is based on sustainable principles. The agricultural sector has made progress in achieving its environmental objectives. In 1991, low-till and no-till practices accounted for nearly one-third of the seeded cropland in Canada compared to negligible amounts only 20 years ago. Summer fallow has decreased almost 30 percent in the last two decades. Through federal and provincial efforts aimed at reducing toxins, some 29 compounds affecting more than 2000 agriculture-related products have been controlled or eliminated. Also, the agricultural sector is working towards meeting the terms of the Montreal Protocol on Substances that Deplete the Ozone Layer by reducing production and use of methyl bromide, a fumigant. The sector has demonstrated a willingness and an ability to adapt to its environmental challenges.

4. Finance: Through the sustainable agriculture component of the Green Plan, the federal government is providing $138 million over six years (1991/92-1996/97) to help the sector continue to make the transition to more environmentally sustainable practices. Of this amount, $34 million has been earmarked for national initiatives; $104 million has been matched by equal funding from provinces under joint agreements. Province/producer/industry-led councils may also allocate funds for environmental projects under the $240 million Canadian Adaptation and Rural Development Fund (1995/96-1998/99).

5. Regional/International Cooperation: Internationally, Canada is working to help other nations meet their Agenda 21 objectives. IDRC is supporting research on food systems in regions where problems of food insecurity, poverty, and environmental degradation are most urgent. Indigenous knowledge and coping mechanisms at the household level will be incorporated in efforts to find local sustainable solutions. For example, the use of natural biological pesticides, which can be made locally at little or no cost, has been identified as a key area of research. CIDA has a number of projects in place promoting environmentally sound farming practices and rural economic diversification in developing countries. Much of this work is carried out through community-level education and the introduction of appropriate technologies.

STATISTICAL DATA/INDICATORS				
	1985	1990	Latest 199_	
Agricultural land (Km^2)	746,300	740,500		
Agricultural land as % of total land area	7.5	7.4		
Agricultural land per capita	29,656	27,855		
	1989/90	1992/93	Latest 199_	
Consumption of fertilizers per Km^2 of agricultural land as of 1990	2,925	2,946		
Other data				

AGENDA 21 CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY

NATIONAL PRIORITY:

STATUS REPORT:

Convention on Biological Diversity

- Convention
  - Signed in 1992
  - Ratified in 1992

Convention on International Trade in Endangered Species of Wild Fauna and Flora

- Convention ratified in 1975
- Latest report submitted in 1996

Additional comments relevant to this chapter

In November 1995, environment ministers from each of Canada's provinces and territories joined the federal Minister of the Environment in signing the Canadian Biodiversity Strategy. Based on extensive consultation with all sectors of Canadian society, the Strategy will be implemented through measures such as: the filing, within one year of Strategy approval, of jurisdictional reports on policies, activities, and plans that help implement the Convention on Biodiversity (CBD); coordination of national and international Strategy elements; formal mechanisms that permit and encourage non-government participation in Strategy implementation; and reports on the status of biodiversity. In November 1995, Montreal was chosen as the site for the Permanent Secretariat of the CBD by the second meeting of the Conference of the Parties to the CBD meeting in Djakarta, Indonesia. The new premises of the Permanent Secretariat in Montreal were officially opened in May 1996.

In October, 1996, the Endangered Species Protection Act bill was introduced into Parliament. The Act is designed to prevent extirpation or extinction of wildlife species, and to secure their recovery. The scope of the Act covers wildlife within federal jurisdiction, and will be complemented by provincial and territorial legislation and programs under a National Accord for the Protection of Species at Risk. Other important legislative or policy initiatives include the proposed Oceans and Endangered Species legislation, and a National Program of Action on Land-Based Sources of Marine Pollution.

In 1996, the federal government in cooperation with the provinces, territories, and Aboriginal communities, created two new national parks and provided interim protection for two areas that have been proposed as national parks. In addition, the federal government has announced that it is considering the establishment and management of national marine conservation areas.

The national Ecological Monitoring and Assessment Network (EMAN) is providing the opportunity to develop inventories and engage in long-term biodiversity monitoring at many locations across the country.

In order to fully implement the CBD, much scientific research remains to be done. For example, Canada needs to improve basic inventory data at both species and ecosystem levels. Only approximately 50 percent of the species that are thought to exist in the country have been identified. Moreover, we must continue to heighten public understanding of the issues related to conservation and sustainable use of biological resources. As well, at both the national and international levels procedures and mechanisms must be in place to ensure that the sharing of benefits from biological resources is fair and equitable.

Cross-Sectoral Issues

1. Decision-Making Structure: Domestically, management of biological resources falls primarily within provincial jurisdictions. However, the federal government, industries, Aboriginal groups, scientific societies and non-governmental organizations (NGOs) all play important roles in the decision-making process.

2. Capacity-Building/Technology Issues: No information

3. Major Groups: A number of co-management boards have been established, composed of representatives of Aboriginal communities and government appointees. Within the Northwest Territories and Yukon, these boards have become the main instruments of wildlife management in land claim areas. Through the Nunavut Wildlife Management Board, Inuit of the Northwest Territories' eastern areas co-manage wildlife in what will become the Nunavut Territory. The Quebec government has prepared a list of parks, ecological reserves, and wildlife management activities for its northern regions that will involve Aboriginal communities. In 1994, the government and the Montagnais concluded an agreement for the co-management of the Louis-Babel ecological reserve. In existence since 1982, the Beverly-Qamanirjuaq Caribou Management Board is an excellent example of incorporation of traditional knowledge into the political process. The BC government has appointed a 19-member panel comprised of scientists and Nuu-Chah-Nulth elders to study ways of changing management practices in old-growth forests around Clayoquot Sound. And Parks Canada and the Inuvialuit of the Western Arctic are working together on a Management Plan for Aulavik National Park on Banks Island.

As Canada moves from strategy to implementation, there is much evidence that economic sectoral groups are becoming increasingly engaged in advancing biodiversity conservation and sustainable use objectives. The forest and agricultural sectors have done much work to identify biodiversity indicators. The Canadian Pulp and Paper Association have created a position and budget for the purpose of developing a biodiversity strategy for the industry. The agricultural community is also developing a response to the Strategy, and has recently compiled an impressive inventory of activities and initiatives undertaken at the farm level.

4. Finance: Adequate financing continues to be a challenge to implementation of the CBD through the Canadian Biodiversity Strategy.

5. Regional/International Cooperation: Canada has been very active internationally in support of the Biodiversity Convention. It has co-sponsored workshops and symposia in Costa Rica, Chile, and Cote d'Ivoire. It has participated in and hosted meetings of the UNEP Expert Panels, and has played an active role in the two meetings of the Inter-governmental Committee fot the CBD. At the first two meetings of the Conference of the Parties (COP) in the Bahamas and Indonesia respectively, Canada co-hosted a Biodiversity Technology Fair. Through the Commission for Environmental Cooperation, Canada has entered into cooperative biodiversity programs with its NAFTA partners. The Canadian Museum of Nature is assisting other countries in the production of biodiversity country studies. Finally, Canada is collaborating in an OECD project to develop biodiversity indicators, and with Germany, Australia, and the World Conservation Monitoring Centre on the creation of an international Clearing House Mechanism for scientific and technical information exchange.

STATISTICAL DATA/INDICATORS

	1992	Latest 199_	
Protected area as % of total land area	5.0		
	1990	**Latest 199_**	
Number of threatened species	23		
Other data			

AGENDA 21 CHAPTER 16: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY

NATIONAL PRIORITY:	
STATUS REPORT: Canada's activities in all areas of the environmental regulation of biotechnology have involved major environmental, industry and consumer groups, governments and the general public. Policies and regulations are moving towards a pollution prevention model that emphasizes assessment prior to release of a biotechnology product into the environment. The federal government regulates biotechnology products using modifications to existing legislation and regulations to ensure that all products are assessed for environmental effects before they are imported or manufactured or sold in Canada. In 1996, a Standing Committee of the federal Parliament held hearings on the regulation of biotechnology in Canada with input from government, industry, academia, risk assessment experts, environmentalists and consumers. The Committee made several recommendations to government to ensure that environmentally sound management of biotechnology products, a responsibility shared among a number of federal departments, is effective. The Committee recommended that the Canadian Environmental Protection Act (CEPA) function as a safety net for products of biotechnology not regulated under other federal legislation. In 1993, nine federal government departments agreed to a framework for regulating the products of biotechnology. Among the principles agreed to was a commitment to maintain Canada's high standards for the protection of the health of workers, the general public and the environment, to use existing legislation and avoid duplication and to develop clear guidelines for evaluating products of biotechnology that are in harmony with national priorities and international standards. In 1996, two federal departments (Agriculture and Environment) published proposed amendments to regulations that would clarify responsibility for and enable environmental risk assessment of the products of agricultural and environmental biotechnology in 1997. These amendments will implement the regulatory components of the federal framework and will ensure that all assessments of biotechnology products in Canada will include assessment of whether they are toxic as defined in the CEPA. The text of the amendments is available to the public on the Internet. A reorganization of seven sectoral biotechnology networks has resulted in the formation of three 'teams' (health, environment and resources) under the umbrella of a new "National Biotechnology Network" with over 4000 members. Each team consists of members of government, industry, and academia and functions to encourage communication between industry, academia, government and the general public regarding both the promotion and regulation of biotechnology products. Communications within the network is fostered by a biannual newsletter and by an annual meeting. Improved public awareness of biotechnology will be important in the future. To help address this, the National Biotechnology Strategy has provisionally approved funding for several projects to identify detailed ethical issues associated with biotechnology. The federal government will spearhead these initiatives and will ensure the involvement of all major groups with an interest in the issue.	

Cross-Sectoral Issues

1. **Decision-Making Structure**: The federal government has the primary responsibility for protection of the environment for applications that are national in scope, with provinces and municipalities having jurisdiction within their respective regions for environmental protection. Provincial input into environmentally sound management of biotechnology is developed through the Federal - Provincial committee on the safety net under CEPA. In 1983, under the National Biotechnology Strategy, an Advisory Committee was formed to provide advice to the Minister of Industry on applications of the National Biotechnology Strategy Fund, valued at $30 million for the 1995-97 period. The Fund will be used to improve regulations, communications and other issues related to the development and management of biotechnology.

2. **Capacity-Building/Technology Issues**: The federal government believes that protection of environmental quality related to biotechnology products and processes requires the involvement of all sectors of society. Research on biotechnology applications to improve the environment includes removal of hazardous wastes and pollutants. Research on biotechnology applications related to agriculture, forestry, fisheries, and mining is carried out by various government agencies and universities. The Medical Research Council is encouraging collaboration in areas of environmental and human health in biotechnology through a joint university-industry program. Recent National Biotechnology Strategy allocations support a range of activities, including the following: more efficient extraction and use of non-renewable resources; development of hardier, disease-resistant canola, salmon and conifer species; enhanced ability to detect pollutants rapidly and more accurately; minimized use of harmful chemical pesticides; assistance in the remediation of surface, subsurface and contaminated aquifers and the destruction of recalcitrant pollutants.

3. **Major Groups**: A study commissioned by Industry Canada and Environment Canada in 1995 reported that there were 538 biotechnology companies in Canada concentrated in Ontario, Quebec and British Columbia. Based on 1993 data, 23,260 people were working in Canadian biotechnology. During the 1989 to 1993 period, employment grew at 14% per year. Almost all Canadian universities are conducting some research in biotechnology as well. Consumer groups (Consumers Association of Canada) and environmental groups (Canadian Environmental Network) are also involved in consultation on biotechnology, including regulatory, ethical, and socio-economic issues.

4. **Finance**: In 1993, the total value of Canadian biotechnology sales was $2 billion of which 22 % was in recombinant DNA activity. Research and development grew by 41% from 1989 to 1993 reaching $991 million in the last year of that period. Exports totalled $750 million in 1993. The Natural Sciences and Engineering Research Council and the Medical Research Council are two major bodies that fund research at Canadian universities. For example, together they supported $78 million of research in 1991-92 in biotechnology.

5. **Regional/International Cooperation**: Canada is an active participant in international bodies such as the OECD and UNEP. For example, Canada is working, through the OECD to develop a set of principles for harmonized regulation of environmental releases of biotechnology products. A recently created network of Canadian companies, specializing in bioremediation, has been formed by Environment Canada, Industry Canada, the Environmental Bio-Industries Council of Quebec and the Industrial Biotechnology Association of Canada. This network is currently pursuing market and technology transfer opportunities in Latin America and the Asia-Pacific region. Other biotechnology-related grants to developing countries through the Canadian International Development Agency will assist in building capacity in developing countries. Provincial governments are also actively involved in research and development on applying biotechnology to the environment. For example, the Quebec Biomass Recovery Centre spends $3 million annually, through industry and university cooperative agreements, to design and improve biological processes for organic waste treatment.

AGENDA 21 CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES

NATIONAL PRIORITY:

STATUS REPORT:

The UN Convention on the Law of the Sea

has been signed

Canada is a coastal state with vital sovereign interests in three bordering oceans. Canada has the world's largest coastline (almost 250,000 km) and second largest continental shelf (6.5 million sq. km.). Its 200-mile Exclusive Fishing Zone, declared in 1977, represents 27% of Canada's territory. Approximately 6.5 million Canadians (23%) live in coastal communities. Many major cities are coastal ports or are located on the St. Lawrence/Great Lakes system, one of the world's longest and most heavily used waterways. In Canada, the federal government has authority over oceans and its resources. Provincial and territorial governments have jurisdiction over shorelines, some marine areas, and many land-based activities. Aboriginal people are gaining greater control over specific resource management concerns in some regions. Canadian governments have begun to pursue ocean-related policies that reflect an ecosystem based approach, incorporating principles of sustainable development and integrated management.

The federal Parliament recently passed the new Canada Oceans Act (COA) which received Royal Assent in December 1996. The COA represents a pivotal step in establishing Canadian oceans jurisdiction and consolidating federal management of oceans. The COA responds to many of the measures outlined in Chapter 17 of Agenda 21. The Act confirms Canada's jurisdiction over its maritime zones (its Territorial Sea, the Contiguous Zone, and the Exclusive Economic Zone), and their resources consistent with the United Nations Convention on the Law of the Sea (UNCLOS), and the responsibility to manage them

sustainably.

Key to the COA is the development of an Oceans Management Strategy (OMS). Based on the principles of sustainable development, the integrated management of activities in estuaries, coastal and marine waters, and the precautionary approach, the OMS will set the stage for many oceans activities. Addressing objectives within Chapter 17 of Agenda 21, the OMS is based on the premise that oceans activities management must be based on a collaborative effort among stakeholders. The OMS allows for the development of flexible strategies on oceans activities management that can be implemented regionally by stakeholders. The OMS also calls for the creation of marine protected areas. Canada intends to develop a National Program of Action for the Protection of the Marine Environment From Land-Based Activities by 1998. Canada's National Program of Action will be developed and implemented as a partnership between federal and provincial/territorial governments, in consultation with other relevant stakeholders including environmental groups, aboriginal organizations, industry, academia, and private sector organizations. It will focus on regional implementation in the Atlantic Ocean, the St. Lawrence River / Gulf of St. Lawrence, the Pacific and Arctic Oceans under the umbrella of a National Programme of Action. Canada is also actively collaborating with Arctic nations to develop an Arctic Regional Program of Action under the auspices of the Arctic Environmental Protection Strategy and the Arctic Council. The federal government has taken legislative and policy steps to address marine pollution in the Fisheries Act, the Toxic Substances Management Policy, and the Canadian Environmental Protection Act (CEPA). The federal government intends to amend CEPA to help further guide reduction of contamination from land-based sources of pollution.

The Arctic Ocean is a particularly sensitive environment. It has been the focus of many Canadian environmental initiatives. Prominent among them is the Arctic Environmental Protection Strategy and the recent creation of the Arctic Council. This has expanded scientific research on contaminants, the use of traditional knowledge concerning marine living resources, the monitoring of water quality, the cleanup of hazardous wastes in Canada's North and the promotion of sustainable development.

In 1994, Canada acceded to the International Convention on Pollution Preparedness, Response and Co-operation, which is aimed at pollution of the sea by oil. As a result, Canada is revising its joint marine contingency plan with the United States for responding to spills in shared boundary waters. Canada is also playing an active role in the revision of the Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter.

(Cont'd)

The conservation and sustainable utilization of fishery resources remains a primary focus of oceans-related activity for Canada. Stock conservation problems, allocation conflicts between user groups, international transboundary disputes, excessive harvesting capacity and fiscal restraint have combined to encourage the federal government to pursue a strategy to advance industry restructuring and to introduce changes to fisheries policies and management practices domestically and internationally. The objective of these changes is an economically and environmentally sustainable fishing sector. Canada is guided in this undertaking by the following principles: conservation comes first; aboriginal rights must be respected; industry capacity must be balanced with the sustainable carrying capacity of the resource; and, government and industry must move towards operating in partnership with one another. In addition, provincial and territorial governments are working cooperatively with the federal government to improve policies to strengthen fisheries management. Internationally, the "Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 Relating to the Conservation and Management of Straddling and Highly Migratory Fish Stocks" (the UN Fish Agreement (UNFA)) was adopted by consensus in August 1995 at the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks. Canada participated actively in its elaboration as the leader of a group of coastal states and was among the first countries to sign the Agreement in December 1995.

Cross-Sectoral Issues

1. **Decision-Making Structure**: In Canada, the federal government has authority over oceans. Provincial and territorial governments have jurisdiction over shorelines, some marine seas, and many land-based activities.

2. **Capacity-Building/Technology Issues**: Science and exchange of information on the oceans and its living resources remains a priority. International cooperation and research must continue in order to understand oceans better and to secure their future sustainability.

3. **Major Groups**: Aboriginal people are gaining greater control over specific management issues in some regions, particularly in northern Canada. For example, fisheries and marine co-management processes are part of comprehensive land-claim agreements in the Northwest Territories. Under these agreements, Inuit have rights of involvement in the decision-making process related to marine conservation and the harvesting of marine mammals in and beyond their claim settlement areas. The federal government launched the seven-year Aboriginal Fisheries Strategy in 1992. Under this strategy, the federal government enters into agreements with Aboriginal organizations to integrate Aboriginal people into the sustainable management of the fishery, provide economic benefits, and establish and provide allocations of fish.

4. **Finance:** No information

5. **Regional/International Cooperation**: In 1994, Canada acceded to the International Convention on Oil Pollution Preparedness, Response and Co-operation 1990, which is aimed at pollution of the sea by oil. As a result, Canada is revising its joint marine contingency plan with the United States for responding to spills in shared boundary waters. Canada is playing an active role in the revision of the Convention on the Prevention of Marine Pollution by Dumping of Waste and other Matter. Land-based sources of pollution are another focus of international activity. In November 1995, Canada, along with the world community, endorsed the Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities. The Global Programme of Action calls on countries to develop regional and national programmes of action to prevent, reduce and control land-based activities that contribute to the degradation of the marine environment. CIDA, the International Development Research Centre (IDRC), and the Department of Foreign Affairs and International Trade all provide assistance to partner countries and regional organizations in oceans management, development, and research.

STATISTICAL DATA/INDICATORS

	1980	1990	Latest 199-	
Catches of marine species (metric tons)				
Population in coastal areas				
Population served by waste water treatment (% of country's total population)				
Discharges of oil into coastal waters (metric tons)				
Releases of phosphate into coastal waters (metric tons)				
Releases of nitrate into coastal waters (metric tons)				
Other data				

AGENDA 21 CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES

NATIONAL PRIORITY:

STATUS REPORT: Canada has approximately 9% of the world's renewable water resources. However, while about 60% of Canada's freshwater drains north, 90% of the Canadian population lives in the south, where pollution and escalating demand are increasing pressure on freshwater resources. While Canada has made significant progress in cleaning up and preventing pollution, and in moving towards integrated management and ecosystem approaches in protecting freshwater resources, work remains to be done. Specific challenges include the reduction of water use, which remains among the highest per capita in the world, reducing the amount of untreated industrial and municipal wastewater entering the environment, and continuing efforts to curb the release and deposition of contaminants in surface and groundwater.

Policy and Legislation: Federal and provincial governments continue to incorporate the principles of sustainable development into water policy and legislation. The legislative framework protecting water is being strengthened through both sector-specific and broad-based environmental legislation such as those designed to control toxic substances and prevent pollution (e.g., Canadian Environmental Protection Act and provincial legislation). The establishment of environmental assessment legislation by all provinces and one territory over the past two decades, and by the federal government (Canadian Environmental Assessment Act) in 1995, has ensured that environmental considerations are integrated into the planning phase of developments, including those which impact on water. Regulations under federal and provincial legislation have been revised to set stricter limits on effluent discharges from pulp and paper mills. The 1996 Alberta Water Act promotes water conservation, strengthens licensing and restricts interbasin diversion. In British Columbia, the 1995 Water Protection Act prohibits bulk water export and diversion between major watersheds. "Guidelines for Canadian Drinking Water Quality" (6th edition, 1996) and "Guidelines for Canadian Recreational Water Quality" are routinely updated by and published by Health Canada. "Canadian Water Quality Guidelines" are currently being updated by the Canadian Council of Ministers of the Environment (CCME). These guidelines recommend science-based, nationally consistent levels of protection for major water uses in Canada including: drinking, recreation, freshwater and marine aquatic life, and agricultural uses (irrigation and livestock water). They are based on the scientific assessment of human and environmental health risks associated with priority chemicals as well as physical, radiological, and microbiological water quality parameters.

Actions: Initiatives such as the Great Lakes, Fraser River, St. Lawrence and Atlantic Coastal Action Plans, and the Arctic Environmental Strategy show how federal, provincial and territorial governments work together with communities and non-governmental organizations to address ecosystem health and sustainable development, including control and clean up of fresh water pollution. This cooperation is also the basis for an improved understanding of the cumulative effects of industrial and municipal development on aquatic ecosystems, under the recently completed Northern Rivers Basin Study. Governments continue to work directly with these sectors to prevent or reduce pollution: examples include Ontario's Municipal/Industrial Strategy for Abatement, Quebec's Program for the Reduction of Industrial Discharges, and the federal Accelerated Reduction and Elimination of Toxics program.

Broad-based cooperation is the basis of the National Action Plan to Encourage Municipal Water Use Efficiency adopted by the Canadian Council of Ministers of the Environment in 1994. Using water efficiently will save money and energy as well as reducing the need for new or expanded water and wastewater systems. Water and sewer projects accounted for $2.1B of the total $6B spent under the Canada Works national infrastructure program over the last 3 years. Innovative approaches have been developed to support freshwater objectives. For example, Nova Scotia has developed a successful fee credit program by which water withdrawal approval fees can be directed back to support community watershed management groups and water-related research.

Promotion and Awareness: Creating awareness and providing information play a key role in promoting sustainable development. The Blue Thumb Campaign is a community water education program promoted by the Canadian Water and Wastewater Association and many partners including the Federation of Canadian Municipalities and WaterCan. The Canadian Water Resources Association actively encourages and promotes sustainable development of water resources, and in 1994 published "Sustainable Development Principles for Water Management in Canada." Environment Canada has developed an extensive water site on the Internet with direct links to other organizations' water sites.

Cross-Sectoral Issues

1. Decision-Making Structure: Water is a cross-sectoral issue and many federal and provincial agencies share responsibility for its management and use. While there are many examples of successful cooperation between governments, industry and communities in sustainably managing water resources, work remains to be done to integrate decision-making more effectively. The federal and some provincial governments (e.g., Nova Scotia and Saskatchewan) are developing strategies to provide the basis for a more integrated and functional approach to addressing freshwater issues, and for setting policy directions and actions consistent with the changing role of government.

2. Capacity-Building/Technology Issues: The effective management of environmental issues demands an ecosystem approach to monitoring, research, and decision-making. To this end, Canada is developing a generic hydro-informatics system (HYFO), that attempts to integrate field data, numerical modelling, spatial analysis, and decision support.

3. Major Groups: The federal Drinking Water Safety Programme for Natives provides for joint indigenous-government initiatives to increase monitoring of water treatment systems, to train water treatment operators and to evaluate and advise indigenous communities on the design and operation of water treatment systems. The federal government has committed additional funds to accelerate work on First Nations community water and sewage systems.

Non-governmental organizations play an important role in the water field in Canada. The Canadian Water Resources Association is an association of water professionals that stimulates public understanding of water issues, including sustainable development, through workshops, consultations and publications. WaterCan, a not-for-profit organization that supports projects for clean water and sanitation in developing countries, has also provided leadership in educating Canadians through its work with municipalities and World Water Day events. The Canadian Water and Wastewater Association brings together Canadian expertise in these areas, and has taken a leadership role in promoting water conservation by coordinating the implementation of the CCME National Action Plan to Encourage Municipal Water Use Efficiency. The Soil and Water Conservation Society promotes the application of an integrated ecosystem approach to water issues.

4. Finance: There have been significant reductions to freshwater programs recently within federal and several provincial governments. The changing roles, downsizing and restructuring now underway in Canadian governments make the need for a more effective and integrated approach to fresh water more urgent.

5. Regional/International Cooperation: The International Joint Commission, established under the Boundary Waters Treaty of 1909, remains an effective institution for managing and protecting the waters shared by Canada and the United States.

Canada contributes to capacity building and the strengthening of institutional and human resource development in developing countries. Examples include involvement in a water management network under La Francophonie and as the collaborating centre for the UN's Global Water Quality Monitoring Programme (GEMS/WATER) in Burlington, Ontario. These initiatives foster information exchange among water managers and have provided training in integrated river basin management, efficient water monitoring techniques, and environmental information systems in Africa, Latin America and the Mekong River region. In 1996, the United Nations University, with the government of Canada, established the International Network on Water, Environment and Health (INWEH) with its headquarters at McMaster University in Hamilton, Ontario; INWEH is a problem solving network of universities, colleges, research institutes, governments, non-government agencies and the private sector that addresses critical water and health issues in developing countries by providing training and education to enable such countries to practice sustainable development.

Canada also promotes the development and sharing of innovative water technologies internationally. A recent example is the water information system developed by Canadians and adapted by Mexico's national water agency for use in its water monitoring and interpretation programs. Other examples include various build-operate-transfer projects undertaken by Canada's Wastewater Technology Centre.

Canada will also host the World Water Congress of the International Water Resources Association in Montreal, September 1-6, 1997.

STATISTICAL DATA/INDICATORS				
		1980	1990	Latest 199-
Fresh water availability (total domestic/external in million m^3)				
Annual withdrawal of freshwater as % of available water		2		
Other data	1981	1986	1991	1994
Water Withdrawals (millions of cubic metres/yr)	37,254	42,216	45,096	
Wastewater Treatment (urban pop. with some form of treatment) (total urban population)		13.5M (21.4M)	17.5M (22.4M)	19.5M (23.9M)
Water Price for 25cu.m. (res. mean monthly, incl. sewer charges)		$13.68	$20.57	$23.68

AGENDA 21 CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN TOXIC AND DANGEROUS PRODUCTS

NATIONAL PRIORITY:

STATUS REPORT: Governments across Canada have taken legislative and regulatory action to prevent or control the use or release of toxic chemicals and their impacts on the environment. The federal government is revising the Canadian Environmental Protection Act (CEPA) and the Pest Control Products Act to enhance current mandates to manage toxic substances in all stages of their life cycle. As part of the "cradle to grave" management approach to toxic substances, CEPA ensures that no new substance is introduced into the Canadian marketplace before an assessment of its "toxicity" has been completed. Approximately 450 new substances are notified in Canada each year. Since the introduction of the program in July 1994, 9 new substances have been subject to restrictions imposed on their manufacture or importation and one substance has been banned from entering Canada. Under CEPA the federal government has completed environmental and health risk assessments of 44 existing substances. For 25 substances considered toxic under CEPA, regulations have been implemented or management options are being developed. An additional 25 substances have been identified for priority assessment.

As noted in Chapter 9, Canada has met its commitments under the Montreal Protocol on 0zone Depleting Substances.

Canada's National Pollutant Release Inventory requires companies meeting certain criteria to collect information on the releases of specified substances into air, water and land. Reports for 1993 and 1994 have been published. Detailed emission data for individual companies are available on Environment Canada's Web Site, Green Lane.

Canada announced the Chlorinated Substances Action Plan in 1994. The Plan focuses on eliminating or significantly reducing toxic chlorinated substances using both regulatory and non-regulatory tools. Over 1000 chlorinated substances have been targeted under the program.

In 1995, the federal government adopted the Toxic Substances Management Policy. The Policy emphasizes the need to strengthen preventive and precautionary approaches to managing toxic substances. The first management objective is the virtual elimination from the environment of persistent and bioaccumulative toxic substances that result from human activity (Track 1 substances). The second objective is the management of other toxic substances of concern throughout their life cycle to prevent or minimize release to the environment (Track 2 substances). Provincial governments are also developing comprehensive approaches to the management of toxic substances.

As part of a major reform of the pesticide regulatory system, the federal government created the Pest Management Regulatory Agency (PMRA), a centralized agency responsible for pesticide registration. Reforms include greater emphasis on alternative pest management strategies. This area of work is also supported by Agriculture and Agri-Food Canada which is engaged in research efforts focused on integrated pest management approaches. PMRA is developing a national database on pesticide use.

Examples of federal/provincial cooperation to eliminate or substantially reduce deleterious and toxic substances include the Fraser River Action Plan, St Lawrence Vision 2000, and the Canada-Ontario Agreement respecting the Great Lakes Basin Ecosystem.

Canada strengthened its ability to assess the impacts of disease and toxic substances on wildlife by establishing the Canadian Cooperative Wildlife Health Centre in 1992 and by maintaining support for wildlife toxicology research by federal agencies. In 1996 the federal government banned the use of lead shot for migratory game bird hunting in National Wildlife Areas (NWAs) and is now working toward a national ban. Also in this year the use of small lead fishing weights was banned in NWAs and National Parks.

Cross-Sectoral Issues

1. Decision-Making Structure: As noted in Chapter 9, the environment is a shared responsibility within the federal government and between the federal and provincial governments. Individual federal departments are responsible for ensuring protection of the environment within their particular mandate. Through the Canadian Council of Ministers of the Environment, the federal and provincial governments are working together to develop a Canada-wide accord designed to lead to more consistent environmental protection across Canada.

2. Capacity-Building/Technology Issues:

3. Major Groups: As the primary source and consumer of toxic chemicals, the private sector is taking proactive action. Examples include guidelines and codes of practice developed by the Canadian Chemical Producers Association under its Responsible Care programme. Canada's chemical industry has initiated the National Emission Reduction Master Plan, a voluntary approach to monitoring, collecting and reporting release information. The Major Industrial Accidents Council of Canada is developing guidelines and tools to improve chemical emergency prevention, preparedness and response. Under the Accelerated Reduction-Elimination of Toxics (ARET) challenge, launched in 1994, industry and government are working together to reduce or eliminate releases of the most toxic substances into the Canadian environment. To date participating companies have reduced their emission levels by 49% from base year (1988) levels. Through formal environmental agreements and memoranda of understanding, industry and other stakeholders are working in partnership with governments to achieve environmental protection goals through voluntary actions focussing on reducing toxic releases. Examples include agreements with the automotive and automotive parts manufacturing, printing and graphics and dry cleaning sectors. Industry, environmental NGOs and the provinces are working with the federal government to develop long term strategies in the area of pest management.

4. Finance: No information

5. Regional/International Cooperation: In February, 1997, Canada will host the second meeting of the Intergovernmental Forum on Chemical Safety in Ottawa. As noted in Chapter 9, Canada also plays a leadership role in the development of an international agreement on Persistent Organic Pollutants (POPs). Canada an active participant in the current negotiations for a legally-binding instrument to implement the Prior Informed Consent Procedure to trade in certain banned and severely restricted chemicals. Other international activities include the Sound Management of Chemicals Working Group under the North American Commission for Environmental Cooperation, the Technical Working Group on Pesticides under the North American Free Trade Agreement and the OECD Chemicals Program and Pesticide Forum.

AGENDA 21 CHAPTER 20: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS WASTES, INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN HAZARDOUS WASTES

NATIONAL PRIORITY:

STATUS REPORT:

The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal

- **Basel Convention**

  Signed; and

  Ratified in 1992

- The latest information was provided to the Basel Convention Secretariat in 1995.

Additional comments relevant to this chapter

A. Hazardous Waste Minimization

Although the industry-led Hazardous Waste Minimization Committee, established in 1992, addressed many hazardous waste issues, it failed in its goal to put in place a national waste minimization strategy. Therefore, Environment Canada is evaluating various options for pursuing hazardous waste minimization, including economic instruments, regulatory measures and partnership agreements.

In 1993, the Canadian Council of Ministers of the Environment (CCME) re-established its Hazardous Waste Task Group to promote the uniform management of hazardous wastes across Canada.

In 1995, Canada completed a national inventory of generation rates of hazardous wastes. The inventory is to be used as a tool to set waste minimization targets.

B. Strengthening Institutional Capacities

The federal government is updating the Canadian Environmental Protection Act (CEPA). A bill to renew CEPA was introduced in the House of Commons in December 1996. It proposes additional authority on issues such as: banning exports and imports to and from any country when required under international agreements; controlling transboundary movements of non-hazardous wastes for final disposal; better ensuring the environmentally sound management of transboundary movements of hazardous wastes; and requiring plans for reducing/phasing out of the exported hazardous waste destined for final disposal. Some provinces are currently reviewing their regulations and policies concerning the generation of hazardous wastes and their management, in order to prevent pollution arising from inappropriate disposal.

In 1994, the Ministers of the CCME committed their departments to work towards a harmonized national definition of hazardous waste, taking into account Canada's international obligations. A completion date of March 1997 is expected to be met.

Under the former National Contaminated Sites Remediation Program, governments initiated or completed remediation at over 40 high-risk contaminated sites. More than 50 technologies were also demonstrated under the Development and Demonstration of Site Remediation Technologies component. Furthermore, some 325 federal government sites were assessed, and 18 were remediated under the Federal Sites Component of the program. This program ended as scheduled at the end of March, 1995. The provinces also have various programs to identify and restore contaminated sites.

The CCME Contaminated Sites Advisory Group has recently developed a national guideline for the management of contaminated sites in Canada. The report provides general guidance and links the various CCME technical documents and scientific tools available within this process.

In 1994, the federal government amended its Ocean Dumping Regulations to ban the disposal of radioactive waste and industrial wastes at sea. Future amendments to the Regulations will include the environmental assessment procedures and standards outlined in the Waste Assessment Framework of the London Convention 1972 and the 1996 Protocol to the Convention.

Some provincial governments have played a leading role in the development of capacity for managing hazardous waste treatment. The Alberta Special Waste Management Corporation was successful in securing one of the first fully integrated hazardous waste management facilities in North America which completed an expansion in 1993. The centre treats those hazardous wastes that remain after waste minimization and that cannot be handled by conventional methods. In 1995, Alberta opened its borders to receive hazardous waste destined for final disposal from other Canadian provinces. In 1996, the facility was divested to its private sector partner. This gives Canada hazardous waste management capacity in both the east and the west.

Nevertheless, as the process of siting new disposal facilities has become increasingly difficult, provincial governments are now placing more emphasis on reducing the quantity of wastes requiring final disposal. For example, the governments of Ontario and British Columbia have policies to implement programs on reduction at source, reuse and recycling. As a result, these governments have reduced their efforts to establish new centralized facilities, and are looking for the private sector to implement such initiatives. New private sector residual disposal capacity is expected to come on line in Ontario during 1997, to augment existing incinerator, treatment and landfill options already in place. Similarly, the Manitoba Hazardous Waste Management Corporation's initial planning and site selection work resulted in the approval of a centralized site. Plans for the development of a complete facility were substantially scaled down, however. The government of Quebec will remove barriers to the recovery of wastes in its new regulations concerning dangerous substances, and will promote the reduction at source, reuse, recycling and recovery of such materials.

C. Control of Transboundary Movements of Hazardous Wastes / Prevention of Illegal International Trade

Canada has developed a new computer system to support its efforts to track and control international movements of hazardous wastes. The system became operational in July, 1996 and provides enhanced validation and cross-checking of data. It will be available on-line to enforcement officials across the country by January 1997.

Following the second meeting of the Conference of the Parties to the Basel Convention, the federal government increased coordination among its departments to develop intelligence to detect and monitor illegal traffic of hazardous wastes. Upon Canada's ratification of the Basel Convention in 1992, Environment Canada and Customs inspectors were provided with the training necessary to monitor transboundary movements and prevent any illegal traffic of hazardous wastes involving Canadian companies. They will receive refresher training starting in late 1996.

Cross-Sectoral Issues

1. Decision-Making Structure: One of the key elements of the Canadian federal regulatory process is the mechanism of multi-stakeholder consultation, by which governmental and non-governmental organizations, interested parties and businesses are permitted to comment on proposed policies and legislation at the draft stages.

2. Capacity-Building/Technology Issues: Canada provides bilateral assistance through its Canadian International Development Agency and participates in many bilateral activities related to capacity building. Canada has Memoranda of Understanding on environmental cooperation with several countries and has undertaken various activities related to hazardous waste management. Under the Basel Convention, Canada has been involved in the preparatory work towards the establishment of regional centres for training and technology transfer in the Latin American and Caribbean region.

3. Major Groups: Internationally, Canada is party to the Basel Convention, the OECD Council Decision on Trade in Recyclable Materials, and the Canada-USA Agreement dealing with Transboundary Movement of Hazardous Wastes. Domestically, the Canadian Council of Ministers of the Environment (CCME) and its Hazardous Waste Task Group has undertaken work in the areas of harmonization of waste legislation, policies and programs on a national basis.

4. Finance: The Canadian market for hazardous waste management services is estimated at $2 billion annually, and employs 4,000 to 5,000 people providing services in consulting, chemical analysis and operation of hazardous waste management facilities.

5. Regional/International Cooperation: In January 1993, representatives from the four western provinces of Canada, the western U.S. states, Canada's Department of the Environment and the United States Environmental Protection Agency met to review existing policies regarding the flow of hazardous waste in western Canada and the western United States. They achieved a better understanding of the flow and capacities of hazardous waste to determine the needs for further infrastructure development. It is an example of an effort to find regional solutions for waste management.

Under the North American Commission for Environmental Cooperation, priority substances are being considered for regional action that, will take into account all aspects of their lifecycle, including waste management. For example, a regional action plan for PCBs is undergoing final approval.

In November 1996, the Canada-USA Agreement on the Transboundary Movement of Hazardous Wastes was renewed for five years. A policy of sharing facilities, based on the proximity principle, is incorporated into the Agreement. This policy is consistent with the environmentally sound management of hazardous wastes.

STATISTICAL DATA/INDICATORS

	1989	1990	1991	1992	1993	1994	1995
Generation of hazardous waste (t, millions) {% destined for recycling}			5.9* 60%				
Import of hazardous wastes (t, thousands) {% destined for recycling}	154	143	135	124	173 46%	342 72%	383 70%
Export of hazardous wastes (t, thousands) {% destined for recycling}	104	137	223	175	230 50%	168 56%	226 56 %

Other data: *Note: Most recently available data reported in "The Canadian Hazardous Waste Inventory", Environment Canada, 1995.

AGENDA 21 CHAPTER 21: ENVIRONMENTALLY SOUND MANAGEMENT OF SOLID WASTES AND SEWAGE-RELATED ISSUES

NATIONAL PRIORITY:

STATUS REPORT: Governments in Canada are committed to reducing the amount of solid waste sent for disposal to 50% of the 1988 level by 2000. This commitment has been a focal point of efforts by governments, communities, business and environmental interest groups. The Canadian Council of Ministers of the Environment (CCME) waste tracking system indicated a 13% decrease in per capita disposal rate in 1992 as compared to 1988. Other data showed an estimated diversion rate of 17% for residential and ICI (light Industrial/Commercial and Institutional) wastes in 1992. A 1996 survey is being carried out to update the information. Latest data indicates that approximately 1,200 Canadian communities offer curbside recycling collection.

In 1990, the CCME endorsed the National Packaging Protocol to reduce packaging waste by 50% by the year 2000 compared to 1988. The Protocol includes interim targets of 20% reduction by 1992, 35% by 1996 and 50% by 2000. Canada met its 1992 target of 20% reduction of waste packaging going for disposal. Preparation is under way to conduct the 1996 target year survey. Work is underway on the development of a national packaging stewardship model. The model will address national needs while recognizing regional differences.

Provincial and territorial governments have endorsed a national pollution prevention strategy and are pursuing numerous individual initiatives to meet waste reduction goals. Most provinces have adopted stewardship approaches to materials such as household hazardous wastes and beverages as part of their waste reduction strategy for increasing waste diversion.

Since 1988, more than 1 million home composting units have been distributed to Canadian households to divert organics from landfills. The number of centralized composting facilities had more than doubled by 1995 as compared to 1991. A reported 23% of Canadian households composted in 1994 through home composting or by having their organics collected by municipal governments or others for composting. However, only 10% of the total organic waste stream is currently composted. The CCME, as well as some provinces, have also produced Guidelines for Compost Quality.

Canada is developing a national approach for dealing with municipal wastewater to address concerns on a variety of contaminants including ammonia, chlorine, heavy metals and other toxics. One of the current trends is a move toward chlorine-free effluents through dechlorination or alternative forms of disinfection. Provincial and territorial governments promote innovative initiatives and approaches to deal with municipal sewage treatment issues. Most jurisdictions have discharge quality criteria and are stressing municipal responsibility and the user-pay principle.

Cross-Sectoral Issues

1. Decision-Making Structure: In Canada, the responsibility for waste management is shared among the three levels of government. Waste collection and disposal operations come under municipal jurisdiction, whereas the provinces are responsible for the permitting of disposal and treatment facilities. Waste management issues only become a matter of federal-provincial responsibility when federal lands or resources are affected, interprovincial or international transport is involved, or federal assistance is provided.

2. Capacity-Building/Technology Issues: A range of provincial initiatives are helping build capacity at the local, provincial and regional levels. Environment Canada has widely distributed a comprehensive document on Solid Waste Management in Canada. This report promotes leading-edge technologies and the concept of integrated waste management to reduce the amount of solid waste for disposal. Governments are committed to integrated waste management strategies based on the 4Rs: reduction at source, reuse, recycling and energy recovery.

3. Major Groups: Businesses and their representative organizations continue to pursue a variety of initiatives. Markets for secondary materials, particularly paper fibre, continue to grow. The Paper and Paperboard Packaging Environmental Council published and widely circulated a report on activity based costing as a means of tracking the costs of waste diversion programs. Canada has almost doubled its consumption of recovered paper since 1992. Currently, 63 mills consume recycled fibre in their processes. The Federation of Canadian Municipalities is supporting a series of national workshops on economic instruments such as "user pay" as a means of increasing the reduction of waste at source.

4. Finance: No information

5. Regional/International Cooperation: Environment Canada participates on the landfill gas, anaerobic digestion and integrated waste management task groups of the International Energy Agency, and contributes to the waste minimization efforts within OECD.

STATISTICAL DATA/INDICATORS		
	1988	**1992**
Generation of industrial and municipal waste (t) [4]	18.0 [1]	18.1 [2]
Waste disposed (Kg/capita) [5]	930 [3]	810 [3]
Expenditure on waste collection and treatment (US$)	NA	2.3B [6]
Waste recycling rates (%) [4]	6 [1]	17 [2]
Municipal waste disposal (Kg/capita) [7]	NA	289 [2]

(1) Material Flow Analysis Study - Environment Canada
(2) Environment Canada (Solid Waste Data for 1992)
(3) Canadian Council of Ministers of the Environment Data
(4) Residential and Industrial/Commercial/Institutional (ICI) (excludes construction and demolition wastes)
(5) Residential, ICI and Construction and Demolition
(6) Includes annual O&M and annualized capital costs (Perspectives on Solid Waste Management in Canada)
(7) Residential waste only

Note: The CCME waste tracking system indicates a 13% decrease in per capita disposal rate in 1992 as compared to 1988.

AGENDA 21 CHAPTER 22: SAFE AND ENVIRONMENTALLY SOUND MANAGEMENT OF RADIOACTIVE WASTES

NATIONAL PRIORITY:	
STATUS REPORT: As a country that mines and uses radioactive substances, Canada has long had mechanisms to control radioactive wastes. It has also pursued initiatives to respond to technical issues and public concerns. In 1989, the federal Minister of the Environment appointed an independent panel to conduct an environmental assessment and review of the concept of disposing of nuclear waste in the granitic rock of the Canadian Shield. This extensive review has incorporated participation by the public, non-governmental groups and governmental bodies in the assessment of this concept. A report by the panel is anticipated in 1997. Producers of low-level radioactive wastes must develop their own storage and disposal facilities. Atomic Energy of Canada Limited, a corporation owned by the federal government, is implementing a demonstration unit of near-surface disposal facility for its own wastes and those received from small-volume producers who cannot develop their own facilities. A federal Task Force was established in 1987 to work with willing communities to establish a disposal facility for historic low level wastes in the Province of Ontario, and negotiations with an Ontario community have been initiated by the federal government. Canada has one of the largest uranium mining industries in the world. In the area of uranium mines and mill tailings, past and present research conducted by the industry and the federal government provides a sound basis for evaluating potential environmental impacts. The Atomic Energy Control Board (AECB), the federal government body that manages all aspects of the nuclear industry, has established regulatory criteria for the decommissioning of these waste sites. An updated federal *Nuclear Safety and Control Act* has been proposed under which all stages of the development and construction of nuclear facilities would continue to be controlled and subjected to increased environmental scrutiny and evaluation. In addition, the new Act would require operators to provide financial securities for the costs of decommissioning and decontamination, and provide the funds necessary to ensure satisfactory clean-up and remediation of closed operational facilities. This initiative will modernize the control of the nuclear industry and will help to ensure the long-term protection of the environment around uranium mines.	

Cross-Sectoral Issues

1. **Decision-Making Structure:** All aspects of the nuclear fuel cycle are regulated by the federal Atomic Energy Control Board. Permits and licences are required for a broad range of operations and facilities covering the areas of uranium mining and refining, fuel manufacture, nuclear generation of power, the production of radioisotopes and the management of wastes related to these operations.

2. **Capacity- Building/Technology Issues:** Atomic Energy of Canada Limited is recognized as a world leader in the research and development of nuclear energy technologies and participates worldwide in conferences and other technology transfer sessions. In addition, several provincial power utilities possess similar levels of expertise in the application of nuclear power generation technologies and participate actively in world wide technology transfer.

3. **Major Groups:** In Canada, industry and governments are the major groups involved with the safe and environmentally sound management of radioactive wastes.

4. **Finance:** No information

5. **Regional/International Cooperation:** Canada actively participates in the International Atomic Energy Agency (IAEA), the Nuclear Energy Agency of the OECD, the International Commission on Radiological Protection, and the International Maritime Organization, (through the London Convention) through the participation of its scientists, industry and government representatives, and/or by means of financial assistance. Canada provides assistance to developing countries through bilateral cooperation and participation in IAEA programs.

STATISTICAL DATA/INDICATORS

AGENDA 21 CHAPTERS 23-32: MAJOR GROUPS

The role of major groups are also covered under the various chapters of Agenda 21. The following is a summary of main objectives outlined in Agenda 21. Please check the appropriate boxes and describe briefly any important steps or obstacles.

STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

Ch. 24: GLOBAL ACTION FOR WOMEN TOWARDS SUSTAINABLE AND EQUITABLE DEVELOPMENT.
The Convention on the Elimination of All Forms of Discrimination Against Women was

Canada has ratified CEDAW and presented its 3rd and 4th reports to the CEDAW committee on 28 January 1997.

24.2.e In Canada, education is under provincial and territorial jurisdiction. Gender equity in education and training has been on the agenda of Ministers Responsible for the Status of Women since the early 1980's. Most recently, two papers entitled Rethinking Training: Meeting Women's Needs and Meeting Women's Training Needs: Case Studies in Women's Training (1994) were published. In 1995, the video Raising Young Voices and accompanying discussion guides, dealing with issues of gender stereotyping, were made available across Canada. In addition, many provinces and territories have instituted programs and policies that deal with issues of discrimination in the school system, including issues related to sexual harassment. Review of curriculum in the area of maths and science has been a particular focus, with a view to encouraging a greater number of female students to go into these fields.

The federal government has also played a role in promoting the participation of women and girls in male-dominated fields of study by providing special grants for women in certain fields of doctoral studies; developing strategies to encourage girls to enter maths and science, for example bringing science and technology role models into schools; and funding of five new Chairs for Women in Science and Engineering at Canadian universities. Such initiatives will allow increased numbers of women to enter fields where backgrounds in math and science are important, such as environmental resource management and environmental science.

24.2.c, 24.2.d and 24.2.f

Setting the Stage for the Next Century: The Federal Plan for Gender Equality is Canada's federal plan for implementing the Beijing Platform for Action. The Federal Plan includes a commitment to considering gender in the development of legislation and policies related to the environment and sustainable development, and to strengthening the full participation of women as equal partners in sustainable development.

Brief comments on this chapter:

Canada's national machinery for advancing women's equality is well established. Both the federal government and all the provinces and territories have a Minister or Secretary of State Responsible for the Status of Women, and have some form of women's bureau or agency to work with other government ministries by providing gender analysis and policy advice on existing or proposed government legislation, policies and programs with respect to their impact on women.

The *Federal Plan for Gender Equality*, which was presented in 1995 at the Fourth UN World Conference on Women, details over 300 federal commitments to promote women's equality based on key objectives reflecting critical areas of concern in the Platform. One of the most important components of the Plan is a requirement that federal departments and agencies conduct gender-based analysis in order to ensure the integration of women's perspectives in the development, analysis and implementation of government legislation, policies and programs.

Women in Development (WID) is one of the six priorities of Canada's Official Development Assistance program. The goal is to strengthen the full participation of women as equal partners in the sustainable development of their societies by supporting initiatives within and among developing countries to increase women's participation in decision-making processes, improve women's income levels and economic conditions, improve women's access to basic health and family planning services, improve women's levels of educational achievement and skill, and protect and promote the human rights of women.

Canada's efforts to advance equality and women's human rights internationally are a reflection of the work that has been undertaken domestically. Canada has played a key role in bringing issues such as violence against women, women's rights as human rights, national machinery for the advancement of women, and women and decision-making to the forefront of international discussions. Canada will continue to promote the integration and mainstreaming of women's human rights and gender considerations in the work of international fora, and is committed to agreements reached at UN international conferences on children, human rights, population and development, social development, and human settlements.

STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

Ch. 25: CHILDREN AND YOUTH IN SUSTAINABLE DEVELOPMENT.

25.4 establishing processes that promote dialogue between the youth and government at all levels and mechanisms that permit youth access to information and opportunity to present their view. on implementing A21.

Name relevant youth fora (3-4 most important):

1. Canadian Environmental Network Youth Caucus
2. Environment Canada's Youth Round Table
3. Community, school and campus based youth and student environmental organizations
4. Youth participation in international and national sustainable development events

Describe their role in the national process: Full participants; and Advisory

25.6 reducing youth unemployment

Youth unemployment (15-24 years olds) 1992: 17.8% 1996:15.9% (10-month average)

Labour Force Survey (15-24 years olds) October, 1996: 16.8%

25.5 ensuring that by year 2000 more than 50% of youth -- gender balanced -- have access to appropriate secondary education or vocational training.

The goal set in Agenda 21: has been reached.

Brief comments on this chapter (maximum 100 words) (please, do not exceed this page): Since 1992, young people and partners from youth and student groups, governments, non-governmental organizations, education associations and individuals have been active in hands-on sustainable development projects, curriculum and policy change, and awareness campaigns to help implement Agenda 21.

The federal Minister of the Environment has initiated consultations that will create a National Youth Round Table that will promote dialogue and involvement of youth in the policy making process. Environment Canada has also launched initiatives to support youth-driven community projects and begin training young journalists to report on international environmental events from a youth perspective. A Youth Action guide for Agenda 21 has also been created and is being distributed in printed form to all schools and select community groups. It will also be available electronically on TG Magazine Internet network.

Provincially and territorially many projects have been initiated to support youth involvement in decision making processes. For example, British Columbia's Commission on Resources and Environment, includes a strong youth sector in its decision making process. Quebec's Youth Secretariat developed a Youth Environmental Plan of Action.

Canadian surveys indicate that in 1991, approximately 80% of 20 year olds had completed secondary education. To address youth unemployment, the federal and provincial governments deliver a range of programs to assist young Canadians to find work or gain practical work experience, including in environmental issues.

Canada ratified the UN Convention on the Rights of the Child in 1991 and is working in partnership with provincial and territorial governments and non-governmental organizations to promote the Convention, both domestically and internationally.

STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

Ch. 26: RECOGNIZING AND STRENGTHENING THE ROLE OF INDIGENOUS PEOPLE AND THEIR COMMUNITIES.

Federal government departments providing programs and services to Aboriginal and First Nations communities are developing departmental Sustainable Development Strategies in cooperation with Aboriginal organizations. These strategies, to be completed by December 1997, will incorporate the use of traditional knowledge and their traditional decision-making processes.

Proposed amendments to the *Canadian Environmental Protection Act* would give First Nations responsibility for enacting their own environmental protection regulations. Nationally, the federal government administers the Canadian Environmental Assessment Act which requires a thorough environmental assessment of projects in areas of federal jurisdiction, including Indian reserves. Under the changes before the federal Parliament now, Aboriginal communities would be able to conduct their own environmental assessments of projects affecting Indian reserves.

Legislation pertaining to the environmental assessment of projects in the north, provides for establishment of co-management boards with appointments by government and Aboriginal organizations. Through these co-management agreements, land claim agreements, and legislation, many Aboriginal groups participate in the decision-making process with provincial, territorial and the federal governments on such matters as land use, forest practices, wildlife, resource use and economic development.

Five northern Aboriginal groups were integral partners in the development and implementation of the Arctic Environmental Strategy (AES), initiated in 1991. The success of the AES can be seen in the way it promoted sustainable development through four constituent programs: action on waste clean-up; contaminants; water management; and environment/economy.

Canada along with the other Arctic states (Iceland, Denmark, Norway, Sweden, Finland, the Russian Federation and the United States of America) adopted the Arctic Environmental Protection Strategy (AEPS) in 1991. Canada was instrumental in ensuring participation of Aboriginal peoples in implementation of the AEPS which deals with the protection and sustainable development of the circumpolar Arctic. They participate in the following programme areas of the AEPS: Arctic Monitoring and Assessment; Sustainable Development and Utilization; Emergency Prevention Preparedness and Response; and Conservation of Arctic Flora and Fauna.

Aboriginal peoples have Permanent Participant status in the new Arctic Council that was launched in September 1996, thereby enabling them to participate in its deliberations in a meaningful way. The main activities of the Council will focus on the existing programs established under the AEPS and a new program dealing with economic, social and cultural issues.

STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

Ch. 27: STRENGTHENING THE ROLE OF NON-GOVERNMENTAL ORGANIZATIONS: PARTNERS FOR SUSTAINABLE DEVELOPMENT.

27.5 developing mechanisms that allow NGOs to play their partnership role responsibly and effectively.

27.6 reviewing formal procedures and mechanisms to involve NGOs in decision making and implementation.

27.8 promoting and allowing NGOs to participate in the conception, establishment and evaluation of official mechanisms to review Agenda 21 implementation.

- Mechanisms exist already.
- NGOs are participating fully.
- NGOs inputs are important.

27.7 establishing a mutually productive dialogue by 1995 at the national level between NGOs and governments.

Brief comments on this chapter (maximum 100 words) (please, do not exceed this page): NGOs, representing the interests of civil society in Canada, are well established, and integral to the consultation processes of Canadian governments. The Canadian Environmental Network is a national network of almost 2,000 environmental NGOs. Its goal is to coordinate activities of the NGO networks across Canada and to facilitate discussions among those groups and government. Many NGOs operate at the provincial/regional level and some are supported by provincial and municipal governments.

National and provincial roundtables are another example of unique coalition-building institutions in Canada. The National Round Table on the Environment and Economy, with appointed, cross-sectoral opinion leaders, serves as a catalyst in identifying, explaining and promoting the principles and practices of sustainable development. It identifies issues that have both environmental and economic implications, explores those implications, and then attempts to identify actions that will balance economic prosperity with environmental preservation.

Many nongovernmental organizations in Canada face tight budgets at the same time as they are faced with growing demands on their resources. This trend has forced many NGOs to be more strategic in allocating resources to business activities. Efforts are being made to ensure that synergy is created, and that sustainability objectives can be met most effectively. Many are looking for partnerships with other stakeholders to maximise their contribution. These broadly-based coalitions are resulting in more effective civil participation. However, the importance of translating organizational strategies into concrete sectoral action plans remains an ongoing challenge.

STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

Ch. 28: LOCAL AUTHORITIES' INITIATIVES IN SUPPORT OF AGENDA 21.

28.2.d encouraging local authorities to implement and monitor programmes that aim to ensure participation of women and youth in local decision making.

Many municipalities in Canada have adopted environmental initiatives. Local authorities generally include environmental and social considerations in their official plans, planning by-laws and general policies.
Most of these local authorities involve representation of women and/or youth.
It is not possible to accurately estimate the percentage of the population involved.
Governments do generally support local Agenda 21 initiatives.

Canada views the role of local authorities as critical in achieving sustainable development, both nationally and internationally. Canadian municipalities have taken a leadership role in developing a high quality of community life that includes respect for the needs of both economic development and environmental protection. The Federation of Canadian Municipalities has an active international program that has facilitated information and technology exchange, directly linking Canadian municipalities with appropriate partners in the developing world.

Ch. 29: STRENGTHENING THE ROLE OF WORKERS AND THEIR TRADE UNIONS.
29.2 full participation of workers in implementation and evaluation of A21.
29.3 a to e (By year 2000, (a) promoting ratification of ILO conventions; (b) establishing bipartite and tripartite mechanism on safety, health and sustainable development; (c) increasing number of environmental collective agreements; (d) reducing occupational accidents and injuries; (e) increasing workers' education and training efforts.

- ILO Conventions have been ratified.
- Workers take some part in National Agenda 21 discussions/implementation;

In Canada, labour has tried, with some success, to link environmental issues to more traditional issues of workplace health and safety. The main focus of labour participation in the implementation of Agenda 21 has related to the work of Chapter 19, and the environmentally sound management of chemicals. This has involved work by labour for the adoption of high national standards of environmental protection especially in pollution prevention. The Canadian union movement has also worked for the establishment of environmental rights such as joint labour-management environment committees in workplaces, the legal right to refuse to pollute and "whistle-blower protection" for workers reporting environmental violations. Amendments to the Canadian Environmental Protection Act that are before the federal Parliament now, include some progress on this last point. The Canadian Labour Congress, Canada's largest labour body, is of the view that Canadian labour has been successful in all areas covered under Chapter 29, except for the participation of workers in workplace environmental audits.

Within Canadian workplaces, labour has worked cooperatively to address environmental issues, such as pollution prevention and waste reduction. For instance, the Canadian Auto Workers and Chrysler Canada have formed a Joint National Environment Committee. Many collective agreements in the auto industry mandate labour participation in pollution prevention and Toxics Use Reduction programmes in the workplace.

STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

30: STRENGTHENING THE ROLE OF BUSINESS AND INDUSTRY.
30.6 increasing the efficiency of resource use, including reuse, recycling, and reduction of waste per unit of economic output.

- There are governmental policies encouraging the above objective.

30.18.a encouraging the concept of stewardship in management and use of natural resources by entrepreneurs.

List any actions taken in this area: Through Memoranda of Understanding, a number of voluntary initiatives are underway with industry. Perhaps the most notable is the Responsible Care initiative of the Canadian Chemical Producers' Association. Responsible Care is recognized as a model industry code of conduct and has been adopted internationally by the chemicals industry. Motor vehicle manufacturers (General Motors, Ford and Chrysler) have, over the past three years, reduced releases of targeted substances by more than 4,000 tonnes. The drycleaners' association in Quebec has developed a guidebook to train drycleaners on water-based dry-cleaning solvents, while in Ontario, six cleaners participated in a demonstration project that tested the viability of "green" cleaning. The printing and metal finishers' associations are also promoting pollution prevention to their members.

The International Chamber of Commerce's Business Charter for Sustainable Development has been endorsed in Canada by 35 companies, nine industry associations and one crown corporation. The Charter's 16 principles provide a framework for the establishment of corporate environmental management systems emphasizing continual improvement.

Sustainable development is a high priority for many industry associations. For example, the Canadian Standards Association (CSA) developed a national sustainable forest management certification program for Canada's forest industry. Based on internationally agreed criteria and advice from interested stakeholders, the standards verify that a defined forest is being managed according to a sustainable forest management system. Model forests have also been established in many provinces to gain practical experience in sustainable forest management techniques. Some provinces, such as British Columbia and Alberta, have also launched discrete sustainable forest management initiatives.

ARET (Accelerated Reduction/Elimination of Toxics)is probably the most significant initiative of the federal government to determine how well voluntary commitments to reduce or eliminate emissions of toxic substances can work. Selected companies have reduced emissions of 117 toxic substances by 36 percent since 1993. By 2000, the objective is to reduce releases by 69 percent (20,700 tonnes).

The National Packaging Protocol is a federal/provincial initiative to reduce the volume of packaging waste sent for disposal by 50% by 2000 from a base year of 1988. Thus far, an absolute reduction of about 20 percent has been achieved through the combined voluntary efforts of business, consumers and governments. Curbside recycling is available in many communities and is financially supported by municipal and provincial governments and industry.

Under Canada's National Action Programme on Climate Change (NAPCC) business is responding to inititiatives to reduce greenhouse gas emissions such as the national Voluntary Challenge and Registry (VCR) Programme and EcoGeste in Quebec.

30.18.b increasing number of enterprises that subscribe to and implement sustainable development policies.
[yes] several big enterprises have adopted sustainable development policies examples - Shell, Imperial Oil, Ontario Hydro, TransAlta, Monsanto, Dow, Dupont, IBM, Alberta-Pacific Forest Industries, Daishowa-Marubeni International

STATUS REPORT ON PARTICIPATION BY MAJOR GROUPS AT THE NATIONAL AND LOCAL LEVELS

Ch. 31: SCIENTIFIC AND TECHNOLOGICAL COMMUNITY.
31.3.b improving exchange of knowledge and concerns between s&t community and the general public.
Scientific community has already established ways in which to address the general public and deal with
sustainable development.
There is some effort in this direction
brief description:
- Not much has changed in this area.

31.9 developing, improving and promoting international acceptance of codes of practice and guidelines related to science and technology and its role in reconciling environment and development.

Brief comments on this chapter not already described in chapter 35 (maximum 100 words) (please, do not exceed this page): Canada's scientific and technological community has long been in the forefront of the sustainable development process and efforts to inform the general public; that status continues. Initiatives that have extended the science and technology base for sustainable development in Canada are covered in the discussion under Chapter 35.

Ch. 32: STRENGTHENING THE ROLE OF FARMERS.

32.5.c Promoting and encouraging sustainable farming practices and technologies.
Research, demonstration and promotion activities conducted across Canada by governments, industry and producer groups contribute to sustainable agriculture by developing and transferring innovative and affordable practices and technologies to farmers, such as precision farming techniques to enable safer and more efficient application of pesticides and fertilizers.

32.5.e Developing a policy framework that provides incentives and motivation among farmers for sustainable and efficient farming practices.
A *Strategy for Environmentally Sustainable Agriculture and Agri-Food Development in Canada*, which will be completed by Agriculture and Agri-food Canada in early 1997, following extensive consultations with stakeholders, provides a framework and action plan to continue and enhance *inter alia* pollution prevention and environmental stewardship through efforts to value fully, protect, and use efficiently the natural resources needed and affected by farmers.

32.5f Enhancing participation of organizations of farmers in design and implementation of sustainable development policies.
Under the sustainable agriculture component of the Green Plan, a 6-year (1991/92-1996/97) environmental action plan of the federal government with some matching support from provinces, farmers participated in the design and implementation of activities to address issues of water quality, waste management and soil conservation.

The most significant recent contributions of farmers and the agricultural community to the achievement of commitments under Agenda 21 are described under Chapter 14 of this report.

AGENDA 21 CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS

Financial resources and mechanisms are also covered under each sectoral chapter of Agenda 21 where relevant. This summary highlights broader national financial policies, domestic and external (including ODA)

NATIONAL PRIORITY:

STATUS REPORT: The federal government established the Green Plan in 1991/92 to fund programs designed to protect and improve the environment for six years. A number of programs started under the Green Plan are now part of the continuing programmes of several federal departments. Key international initiatives include the Global Environmental Facility (GEF), the Montreal Protocol Multilateral Fund (MPMF) and the United Nations Environment Programme (UNEP) Environment Fund.

The federal government introduced the Canadian Environmental Industries Strategy and Technology Partnerships Canada program to help encourage the development of Canada's environmental technologies industries.

The federal government has also provided funds to assist developing countries and environmental non-governmental organizations to participate in key international meetings since UNCED, including the High Seas Fisheries Conference, the first session of the CSD, meetings of the Intergovernmental Panel on Forests and negotiating sessions of the Desertification Convention.

CHANGES IN NATIONAL BUDGET TO ADDRESS SUSTAINABLE DEVELOPMENT:

Each of the federal government's recent budgets has contained measures aimed at integrating the environment and the economy. For example, new tax measures have been introduced to encourage donations of ecologically sensitive land, to improve access to financing for the renewable energy and energy conservation sector and for mine reclamation trust funds. Consultations are underway to examine options to improve the treatment of energy efficiency and heating and cooling from renewable energy sources and to examine possible government policy barriers to recycling activity.

NEW ECONOMIC INSTRUMENTS: A tradeable permit system for two ozone-depleting substances, methyl bromide and HCFCs, has been introduced. The federal and provincial governments are examining the use of economic instruments, along with other policy tools, to address specific environmental problems.

ELIMINATION OF ENVIRONMENTALLY UNFRIENDLY SUBSIDIES: A major review of federal program spending to restructure the role of government and to generate savings for deficit reduction has significantly reduced or eliminated many subsidies, grants and contributions, many of which are in areas relevant to the environment. For example, the federal government has reduced or eliminated many subsidies to the transportation, agriculture, and non-renewable energy sectors and ended direct financial support for energy megaprojects.

ODA policy issues

Donor country.

The Canadian government recognizes that a key element of international cooperation in support of global sustainable development is the provision of assistance, including financial resources, to developing countries to help them to meet their commitments under Agenda 21. The flow of financial assistance from the developed to the developing world should supplement the mobilization of domestic financial, technical, and human resources in developing countries. Official Development Assistance has been identified as the main source of external funding to assist developing countries in the implementation of Agenda 21. Canada remains committed to the target of 0.7 percent of GNP for ODA established at UNCED as a long-term goal, the attainment of which is dependent on a strong Canadian economy. The stated purpose of Canada's ODA is to "support sustainable development in developing countries, in order to reduce poverty and contribute to a more secure, equitable and prosperous world". With this in mind, the Canadian government will continue to direct most of its ODA to low-income countries. Canadian ODA will concentrate available resources on the following six priorities: basic human needs; woman in development; infrastructure services; human rights, democracy and good governance; private-sector development; and the environment.

STATISTICAL DATA/INDICATORS

	1992	1993	1994	1995	1996	
ODA funding provided or received (Total US$million)						
	Average for 92-93		Average for 94-95			
Net flow of external capital from all sources as % of GDP	5.0%		1.9%			
Other data						

AGENDA 21 CHAPTER 34: TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING

Transfer of environmentally sound technology, cooperation and capacity-building is also covered under each sectoral chapter of Agenda 21 where relevant. This summary highlights broader national policies and actions relating to chapter 34.

NATIONAL PRIORITY:

STATUS REPORT ON LINKS BETWEEN NATIONAL, REGIONAL AND INTERNATIONAL INFORMATION NETWORKS/SYSTEMS:

The Canadian environmental industry consists of some 4,500 firms that employ some 150,000 persons. It generates annual revenues of about $11 billion. One third of these firms are manufacturers and account for annual sales of $6 billion, while two thirds are service providers with annual sales of $5 billion. A number of companies have come together to create the Canadian Environment Industry Association (CEIA), an umbrella organization for nine autonomous provincial/territorial associations.

Governments support research and development in this area through tax incentives, direct grants and funding of research in institutions across the country. This support has helped Canadians to develop considerable expertise in industrial and municipal wastewater treatment, site clean-up, air emission control, solid waste management, plant safety and health technologies and remote sensing for land, agricultural, forestry and fisheries management. The application of environmentally sound technologies and alternative energy technologies that will improve the efficiency and environmental performance of traditional manufacturing and resource processing sectors is another area of particular emphasis. Governments' "green industry" initiatives such as the Canadian Environmental Industry Strategy (CEIS) foster Canadian technologies and the environmental industry.

International technology transfer is channeled to other countries through cooperative arrangements between Environment Canada, CIDA, IDRC, DFAIT, Industry Canada and Canadian companies. Governments support efforts by industries and researchers to meet international needs through agreements with other countries, joint ventures and technology transfer. Efforts in technological cooperation and capacity-building are focused on particular areas of Canadian expertise and measures have included environmental trade missions, bilateral memoranda of understanding and other institutional links and initiatives involving the Canadian environmental industry. For example, Environment Canada, with support from CIDA/DFAIT and in partnership with Canadian companies is involved in the transfer of Canadian technologies to Latvia and Ukraine to aid with the cleanup of military and missile sites. Environment Canada is also involved in other technology transfer activities in China, Mexico, Russia, Japan and South Korea. Canada has transferred expertise on environmental regulations, policies and technical programs to several developing countries under the International Environmental Management Initiative, an integral component of Canadian Environmental Industry Strategy. Projects supported by the IEMI include an environmental auditing program in Thailand, vehicle emission control workshops in Mexico and Pakistan and a laboratory accreditation program in Ukraine. Similarly, IDRC has an ongoing Sustainable Technologies Program based in Asia that facilitates the development, diffusion and adoption of cleaner production technologies.

The federal and provincial governments and environmental industry associations, municipal organizations and private sector companies, have set up three Canadian Environmental Technology Advancement Centres (CETACs). The CETACs provide technical, managerial and financial services and support to Canadian small and medium sized companies to help develop and commercialize technologies and access sources of financing and international markets.

Efforts are underway to establish an Environmental Technology Clearinghouse under a trilateral initiative between Canada, Mexico and the USA. The North American Commission for Environmental Cooperation has established this project along with the private sector in the three countries. The Canadian Environmental Training Opportunities Program has been initiated to promote, to the international community, a sampling of the many environmental training courses offered in Canada. The objective of the program is to promote a selection of one or two week full-time courses with emphasis on short courses that have integrated environmental industry support. Private sector initiatives include the development of a vehicle propulsion system using electricity produced by a hydrogen fuel cell. This state-of-the-art technology will help reduce local smog problems and global greenhouse gas emissions.

MEANS OF IMPLEMENTATION:

Canada has developed processes to transfer technology as well as to provide access to technological information. ENV-I-NET, an on-line bulletin board service includes information on environmental technologies and priorities in developing countries to be financed by multilateral international financial organizations. "Canadian Environmental Solutions" is a vendor-oriented multimedia tool that gives Canadian companies an opportunity to use their technologies, products and services to the benefit of developing countries and countries with economies in transition. Environment Canada has developed and is commercializing with private-sector licensees the environmentally friendly Microwave-Assisted Process (MAP ™) for extraction of chemicals at laboratory and industry scales. An on-line bulletin board (SPILLS) that provides technical information to help prevent or prepare for spills of oil and hazardous chemicals is now available. The Green Lane provides updated information on various environmental issues and events on the Internet.

Provide information on the adoption of environmental management systems. National reaction to environmental management system standards such as ISO 14000 Series and others. Please note efforts made at the national level to promote their adoption and the creation of certification infrastructure in order to facilitate access to these standards to local industry.

Environment Canada will be launching a Canadian Environmental Technology Verification (ETV) Program. The ETV program is aimed at the assessment and validation of a performance claim by an independent third party. The ETV Program will pursue recognition from international organizations such as the International Standards Organization (ISO), United Nations's Economic Commission for Europe's Environmental Committee and the North American Commission for Environmental Cooperation. Environment Canada also provides scientific support to the national environmental laboratory certification program of the Canadian Standards Council and the Canadian Association of Environmental Analytical Laboratories. Laboratory certification program seminars have been delivered in Mexico and Ukraine. Environment Canada's Environmental Technology Centre has developed a laboratory inspection program in Canada consistent with OECD "Principles of Good Laboratory Practices". The Centre also plays key roles in the oil and hazardous Materials Committees of the Association for Standards and Testing Materials (ASTM) by providing the leadership and performance standards for environmental protection technologies.

List and describe programs or work under way to facilitate the transfer of ESTs to small and medium sized enterprises. Please note efforts to facilitate access to financial resources and other transfer strategies.

In 1996, Environment Canada, the Toronto Dominion Bank and the federal Western Economic Diversification agency, announced a $40 million Environmental Technologies Loan Program to help environmental companies develop and market new technologies. This pilot program in Western Canada may eventually be extended across Canada and complements the environmental component of Technology Partnerships Canada, which provides 25 to 30 % of total project funding to eligible Canadian companies involved in environmental technology development, demonstration and commercialization through a repayable funding mechanism.

Mexico has been a focus of Canadian assistance since the signing of a bilateral agreement on environmental cooperation in 1990. Implementation of training and certification programs for the Mexican water and wastewater treatment plant operators is being pursued as a follow up to recent bilateral programs with Mexico. A central Mexican model with regional implementation is envisaged and training of Mexican trainers is also a goal. Montreal will host the Americana 97 Trade Show and Conference, a biennial world calibre event focusing on practical solutions to environmental problems. Americana 97 represents an opportunity for research and commercial links between international partners. In 1996, the federal government and the World Bank established a $2 million Canadian Consultants Trust Fund to enhance the participation of Canadian companies in projects and studies of the global environment. The Canadian Consultants Trust Fund was established through an Agreement between the World Bank, Environment Canada and CIDA. The Fund is directed at Canadian technical expertise to identify, prepare and appraise projects financed by the World Bank under the Global Environmental Facility. In 1994, Environment Canada initiated a bilateral program under the Montreal Protocol, an international agreement by 150 countries to control the production of ozone-depleting substances. The program has helped Brazil, Chile, Venezuela and India to meet Protocol requirements. It also has opened market opportunities and links to international financial institutions for Canadian companies.

AGENDA 21 CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT

NATIONAL PRIORITY:

STATUS REPORT ON NATIONAL SCIENTIFIC KNOWLEDGE, RESEARCH NEEDS AND PRIORITIES: STEPS TAKEN TO ENHANCE SCIENTIFIC UNDERSTANDING, IMPROVE LONG TERM SCIENTIFIC ASSESSMENT, BUILDING OF CAPACITY AND CAPABILITY:

Canada faces a major challenge in adjusting its scientific work force to meet emerging issues with limited resources. It is committed to the training and development of new scientists as well as updating the skills of the scientific community.

In support of its commitment to sustainable development, Canada is promoting numerous scientific partnerships among federal departments and agencies, and with provincial and local governments, universities, industry, various non-governmental organizations, and Aboriginal groups. To that effect, federal resource departments are elaborating plans for a consistent approach to science. In January 1995, four federal natural resource departments signed a Memorandum of Understanding (MOU) on science and technology for sustainable development. Six working groups were created to address key environmental issues including: metals in the environment, ecosystem effects of UV-B radiation, renewable energy technologies, climate change and variability, coastal zone management, and R&D priority setting. The first annual report was issued in 1996. As the MOU enters its 2nd year, projects will be completed and new working groups will be created to deal with emerging issues. A new initiative will be the development of a strategy to value natural capital and develop economic indicators of sustainability. The MOU has made significant contribution to the federal government's sustainable development strategy and has proven to be a stepping stone toward integrating sustainable development S&T programs throughout the government. Studies resulting from the various initiatives will serve as a basis for policy and adaptation strategies.

Canada's efforts in environmental research utilizes an "ecosystem approach" that takes into account economic, social, and environmental factors in decision making. Several provinces have programs that facilitate the integration of science into development strategies. Some also have grants programs. Quebec has created an environmental component for the Fund for Governmental Priorities in Science and Technology.

Canada is reassessing and rationalizing scientific monitoring programmes to maintain the databases required for long-term scientific assessments. The national Environmental Knowledge Network (EKN) is building on several government initiatives to identify sources of environmental information worldwide so that Canadians can both access and contribute information. The network will facilitate the integration of environmental, social, and economic information; enhance analysis and interpretation capabilities; optimize environmental assessment; reinforce ability to report environmental information; and increase Canada's contribution to sustainable decision making globally.

The federal Environmental Effects Monitoring programme, which is being created in partnership with industry and provincial governments, to assess, predict, and mitigate the potential ecological impacts of effluent discharges on recipient aquatic ecosystems. These efforts are critical for establishing a scientific rationale for future policies supporting sustainable development in forestry and other resource-based sectors.

Canada has established the cooperative multi-agency Ecological Monitoring and Assessment Network (EMAN), a broadly based network involving partners and agencies cooperating on various aspects of ecosystem research and monitoring. These partners interacting in project planning and in the integration, synthesis, and interpretation of their results. Four major issues (climate change, biodiversity change, toxic effects, and UV-B impacts) drive the network at the national level.

Through research and action programs such as the Northern River Basins Study, the Fraser River Action Plan, the Atlantic Coastal Action Plan and the Great Lakes Action Plan, the federal government is taking a leading international role in designing and implementing large ecosystem-based initiatives. These programs integrate scientific research and assessment within decision and action frameworks that recognize the importance of public participation and community involvement, the incorporation of societal values in establishing ecosystem goals and objectives for ecosystem conservation and protection, and the requirement for an effective public communication strategy.

The Canadian Global Change Programme is the national focal point for global change activities in Canada. It is an independent multidisciplinary network, linking research and policy, and communicating results, ideas, and recommendations to the policy and research communities.

Collaboration with urban agencies, such as the Federation of Canadian Municipalities, is also being undertaken to advance municipal environmental reporting and networks, and to develop urban sustainability indicators.

CANADA

STATISTICAL DATA/INDICATORS			
		Year	
Number of scientists, engineers and technicians engaged in research and experimental development	#	19--	
Total expenditure for research and experimental development (US$eq.)	$	19--	
Other data			

CANADA

AGENDA 21 CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

NATIONAL PRIORITY:

STATUS REPORT:

a) Reorientation of education towards sustainable development:

Elementary and secondary school education falls under the jurisdiction of Canadian provincial governments To ensure information sharing and collaboration in the environmental education field in Canada, the Canadian Council of Ministers of the Environment has established an Education & Communications Task Group. It also works in collaboration with the Council of Ministers of Education - Canada.

Provincial governments are active at different levels in the promotion of environmental education through their environment, natural resource and education ministries. In addition, non-governmental organizations such as Learning for a Sustainable Future work to integrate the concepts and principles of sustainable development into the curricula at all grade levels. At the national level, the Government of Canada made a commitment at the 1996 CSD meeting to work with all jurisdictions and stakeholders to develop a framework for sustainability education over the next twelve months.

b) Increasing public awareness:

Since September 1995, the federal government's public awareness and community funding program, Action 21, has supported over 300 community based projects and launched a public awareness initiative aimed at a broad Canadian audience. The Canadian Youth Action Guide and the Youth Edition of Agenda 21 were distributed to schools. Fifteen Canadian schools are participating in the Rescue Mission Indicators Project to monitor and report to the federal minister on the state of their local environment. The National Round Table on the Environment and the Economy has produced a guide for educators and facilitators on the round table process and sustainable development, and conducted workshops with more than 2000 high school students in Canada.

c) Promoting training:

Occupational training related to environmental issues is growing. The Canadian Council for Human Resources in the Environment Industry is an organization that brings together major employers, industry groups, educators and other interested organizations. It has been organized to identify and help find solutions to skill needs that limit the sector's growth, and to enable more people to develop the skills to enter these occupations. The Canadian Labour Congress has produced a program on workers' environmental rights which stresses the creation of joint union-management environment committees for extending the mandate of existing health and safety committees.

ROLE OF MAJOR GROUPS: Youth as the real stakeholders in the environment will play a key role in education, public awareness activities. Community based and national non-government organizations are critical in advocating, designing and delivering sustainability projects.

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STATISTICAL DATA/INDICATORS				
	1980	1990	Latest 199-	
Adult literacy rate (%) Male				
Adult literacy rate (%) Female				
% of primary school children reaching grade 5 (1986-97)				
Mean number of years of schooling				
% of GNP spent on education				
Females per 100 males in secondary school				
Women per 100 men in the labour force				
Other data				

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AGENDA 21 CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES

National capacity building is also covered under sectoral chapters.
Donors: You may wish to describe here how Agenda 21 has influenced your ODA policies in this area.
Developing countries: You may wish to describe any new national mechanisms for capacity building - and any changes in technical cooperation.

NATIONAL PRIORITY:	
Chapter 37 of Agenda 21 deals with identifying sources of technical co-operation, formulating capacity-building strategies, and establishing a review mechanism of international technological co-operation for capacity-building in developing countries. The overall objective is to develop and improve national and regional capabilities for sustainable development in developing countries. One of the primary goals of Canada's international cooperation with developing countries is to assist them to develop the capacity to identify and meet their own sustainable development objectives. This involves both the transfer of technology and the development of skills and management capacity, including local and indigenous knowledge. Mechanisms for technology transfer must take into consideration the intellectual property rights and terms of transfer/sharing, the appropriateness and adaptability of technologies to be transferred, the availability of financial resources and the capacity of developing countries to absorb new technologies. Canada's approach to the transfer of technology encourages the consideration of demand-focused arrangements rather than the establishment of administratively cumbersome clearinghouse mechanisms. In addition, Canada also encourages the rationalization of existing transfer mechanisms, and the promotion of mutually beneficial technology sharing arrangements leading to expanded trade and market development for participating countries. Canadian assistance in the form of technology transfer and capacity development is routed through a number a channels, notably the Canadian International Development Agency (CIDA) and the International Development Research Centre (IDRC). Most of CIDA's development projects incorporate training programs designed to assist clients in maximizing potential project benefits. IDRC undertakes and supports research into particular development issues with a view to assisting developing countries to enhance their capacity to meet the challenges of sustainable development. Much of the work of the IDRC focuses on introducing new and adapting existing technology and know-how into developing countries through cooperative applied research ventures. One example is CIDA's Southern Cone Technology Transfer project. It is a five year, $15 million development fund, which targets Argentina, Brazil, Chile, Colombia and Uruguay. The projects funds the transfer of Canadian know-how to partner institutions in the Southern Cone, and its adaptation to, and use in, their own cultural and developmental environment. It is an attempt to multiply the institutional linkages between Canada and the Southern Cone in support of sustainable development. Another example is the Canada-Brazil Technology Transfer Project. CIDA funds short-term consulting, training, exchanges and related activities. The $15 million project is also expected to multiply the institutional linkages between Canada and Brazil in support of sustainable development. Canada recognizes the increasing importance of transferring technology and expertise to developing countries to improve their capacity to achieve sustainable development. However, our efforts in this regard are constrained by a scarcity of resources, and consequently the broad participation of the business, academic, and NGO communities is vital if we are to continue to make progress in this regard. Canada is continuing to seek out innovative means to enhance our cooperative relationship with developing countries along non-traditional lines, building linkages at the level of civil society, and allowing for the development of a productive synergy between groups with common interests.	

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AGENDA 21 CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS

Ch. 38: Brief summary of any particular UN System response affecting this country/state:

No information

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AGENDA 21 CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS

These are covered under the relevant sectoral chapters. This is a listing of major agreements/conventions (not already covered) entered into and relevant to Agenda 21:

Since UNCED, Canada has taken part in a series of global negotiations that devote particular attention to the needs and capacities of developing countries. For example, Canada has helped fund the process and the involvement of developing states in negotiating and implementing the Desertification Convention. Canada is also offering to host the Permanent Secretariat of the Convention in Montreal. Canada also worked with developing countries during the United Nations Conference on Straddling Fish Stocks and Highly Migratory Fish Stocks. Canada has signed the resulting international agreement which was adopted by consensus and ratification is a Canadian government priority.

The Protocol amending the Canada-United States Migratory Birds Convention is an example of significant change to a long-standing international agreement with environmental objectives. The Convention, dating from 1916, did not accommodate the traditional harvesting practices and evolving treaty rights of Aboriginal people in Canada. This limitation was one of the main reasons why the Protocol was negotiated. The participation of Aboriginal representatives on the Canadian delegation contributed to the successful conclusion of these negotiations.

Negotiations are underway on a protocol to control persistent organic pollutants under the UN Economic Commission for Europe Convention on Long Range Transport of Air Borne Pollutants (LRTAP). Canada is playing a significant role in this process and recognizes the particular importance of this instrument for northern communities. A protocol to address transboundary pollution from heavy metals and a further protocol with respect to pollution arising from the emission of nitrogen oxides are also being negotiated under the LRTAP Convention.

Canada has a strong interest in reconciling trade and environment concerns in international legal instruments and is participating actively in intergovernmental fora dealing with this issue including the WTO Committee on Trade and the Environment and the OECD.

Under the auspices of the UN Environment Programme, Canada is participating in the International Negotiating Committee for an International Legally Binding Instrument for the Application of the Prior Informed Consent Procedure for Certain Hazardous Chemicals in International Trade.

The North American Agreement on Environmental Cooperation (NAAEC) is a trilateral initiative that has integrated sustainable development and environment concerns. This agreement between Canada, the United States, and Mexico came into force on January 1, 1994 as a companion agreement to the North American Free Trade Agreement (NAFTA). Another significant step forward is the NAAEC mechanism allowing individuals and organizations to make submissions alleging that a Party to the Agreement has failed to enforce its environmental laws effectively. The NAAEC calls for cooperation between the partner countries and it requires cooperation within these countries The Canadian Intergovernmental Agreement for the implementation of the NAAEC in Canada recognizes that the federal, provincial, and territorial governments have distinct and complementary roles to play in achieving the goals of the NAAEC and the environmental goals of NAFTA. The governments of Alberta and Quebec, and soon Manitoba, with their signatures of the Intergovernmental Agreement, have or will become full partners in the implementation of the NAAEC. As a result, Canada is bound by the NAAEC in respect of matters within the jurisdictions of those governments.

Canada and Chile signed a proces-verbal accepting the English text of the Canada-Chile Agreement on Environmental Cooperation which will be the companion agreement to the Canada-Chile Free Trade Agreement in late 1996. Both agreements will be concluded as treaties in the near future and are expected to enter into force on June 2, 1997.

Within Canada the distribution of responsibility between federal, provincial and territorial governments for sustainable development issues is complex. This is a source of constant challenge when Canada prepares for and participates in the negotiation of international legal instruments and in the subsequent implementation of those instruments. While the federal government conducts international treaty negotiations on behalf of Canada, responsibility for environment and sustainable development issues falls within the legislative jurisdiction of both the federal and provincial levels of government. This shared jurisdiction often requires federal and provincial governments to cooperate closely in order to fully implement Canada's international obligations.

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AGENDA 21 CHAPTER 40: INFORMATION FOR DECISION-MAKING

This chapter is also covered under sectoral and other chapters of this profile. The matrix below gives an overview of how national authorities rate the available information for decision making.

Rating of available data and information suitable for decision-making

Agenda 21 Chapters		Very good	Good	Some good data but many gaps	Poor	Remarks
2.	International cooperation and trade		X			
3.	Combating poverty		X			
4.	Changing consumption patterns			X		
5.	Demographic dynamics and sustainability		X			
6.	Human health		X			
7.	Human settlements		X			
8.	Integrating E & D in decision-making					
9.	Protection of the atmosphere	X				
10.	Integrated planning and management of land resources		X			
11.	Combating deforestation		X			
12.	Combating desertification and drought					
13.	Sustainable mountain development					
14.	Sustainable agriculture and rural development			X		
15.	Conservation of biological diversity			X		
16.	Biotechnology					
17.	Oceans, seas, coastal areas and their living resources			X		
18.	Freshwater resources			X		
19.	Toxic chemicals		X			
20.	Hazardous wastes			X		
21.	Solid wastes			X		
22.	Radioactive wastes					
24.	Women in sustainable development					
25.	Children and youth					
26.	Indigenous people					
27.	Non-governmental organizations					
28.	Local authorities					
29.	Workers and trade unions					
30.	Business and industry					
31.	Scientific and technological community					
32.	Farmers		X			
33.	Financial resources and mechanisms					
34.	Technology, cooperation and capacity-building			X		
35.	Science for sustainable development		X			
36.	Education, public awareness and training					
37.	International cooperation for capacity-building					
38.	International institutional arrangements					
39.	International legal instruments					

Additional Comments

Information available for decision making has improved significantly during the past five years as understanding has advanced, and as mechanisms have been developed to provide timely and relevant advice to decision makers in both the public and private sectors. Noteworthy improvements have been achieved in the development of performance measuring systems such as the Environmental Management System. Indicators developed for municipal, provincial and federal decision making have also contributed to the goal of informed and evidence based policy making.

Environment Canada is leading a federal effort to develop a comprehensive national set of environmental indicators for use by decision makers and the public. The indicators provide a representative profile of the state of Canada's environment and will help measure progress towards the goals of sustainable development. Research and development to improve and refine these indicators has continued through work carried out with other federal agencies and consultations with stakeholders. Environment Canada is now publishing environmental indicators regularly through its *Environmental Indicator Bulletin* series. By the end of August 1996, it had published 18 bulletins related to specific issue areas with accompanying technical supplements. Environment Canada is also developing a set of performance indicators by which to measure the effectiveness and efficiency of programmes. Work on the development of sustainable development indicators is also underway within the Canadian Council of Ministers of the Environment and in individual provinces such as Quebec. The Canadian Council of Forest Ministers (CCFM) has produced a framework of criteria and indicators reflecting broad Canadian values on sustainable forest management. The Canadian Standards Association released standards on sustainable forest management based on CCFM's work that are designed to link to the Environment Management System of the International Standards Organization. The Canadian Standards Association is leading Canada's participation in the development of international standards for environmental performance evaluation. Statistics Canada is continuing work on satellite accounts to provide decision makers a measure of the depletion of natural capital.

Internationally, Canada is participating in the indicator development program of the OECD. Canada leads the OECD technical group that is working to specify common definitions and measurement techniques for indicators of sustainable management of forests. Under the North American Trilateral Committee on Environmental Information, Canada, the United States, and Mexico have agreed to work on a number of priority areas. One item concerns identifying and developing indicators representative of issues important to all three countries.

In a country such as Canada with many small, isolated communities, a major challenge is to ensure that access to information and networks is as broad as possible and available at a low cost in order to facilitate the empowerment of individuals and communities. The Canadian Council of Ministers of the Environment (CCME), plays an important role in encouraging better information collection and use through state of the environment (SOE) reporting. Some provinces, such as Quebec and Alberta, are also carrying out state of the environment reporting. The Canada Mortgage and Housing Corporation (CMHC), in cooperation with Environment Canada is developing a set of software tools to allow communities to develop their own sustainability indicators. IISD is involved in developing, indicators for municipalities. The multi-agency network of ecozone-based ecological science cooperative (ESCs) (see Chapter 35) produces environmental information through hard-copy publishing, computer networks such as the EKN, and public media. Information is available on, among other topics, toxic chemicals, endangered species, weather and climate, and sustainable development successes. Environment Canada also develops decision-support software that automates some of the data-merging and analysis tasks that underlie environmental decisions. For example, the Residual Discharge Information System assembles the scientific, industrial, and geographical data needed to analyze trends in the emission of air-borne toxic chemicals by industry throughout Canada. Environment Canada is engaged in creating a framework to integrate data management across the department. The Canadian Institute of Chartered Accountants (CICA) sets accounting, reporting and auditing standards for the business sector and the role of the accounting profession; accounting for environmental costs and liabilities; and *Reporting on Environmental Performance,* a guide for organizations. Provincial data bases, such as Alberta's Natural Heritage Information Centre are an important source of information for decision making.

(Cont'd)

CIDA provides assistance to developing countries to improve their access to information for decision making. The Federation of Canadian Municipalities (FCM) and IDRC intend to use the *Canadian Municipal Environmental Directory* to establish partnerships between Canadian and developing country municipalities. NirvCentre/WEB is the Canadian node of the APC (Association for Progressive Communications) electronic network. It hosts the exchange of information among environmental and developmental NGOs in Canada, and connects Canada to the stream of computer communications between the north and south nodes of APC. The IISD uses NirvCentre/WEB to provide global access to its IISDnet, that carries Sourcebase and Linkages. Updated monthly, Sourcebase identifies key organizations, leading thinkers in sustainable development, and the best publications, communication vehicles, and electronic resources. Natural Resources Canada makes geographical and environmental information available on Internet. Environment Canada's award winning World Wide Website, the Green Lane, gives Canadians access to information on domestic and international environmental issues and services, like weather. It is also being used to conduct consultations on strategic directions. Promotion of an evidence based decision making culture is an emerging priority within Environment Canada and within the federal government.

CANADA

STATISTICAL DATA/INDICATORS				
	1980	1993	Latest 199-	
Number of telephones in use per 100 inhabitants				
Other data				